Textile Industries

Formerly "COTTON"

a W. R. C. Smith publication

JUNE, 1954

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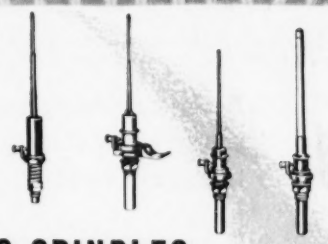
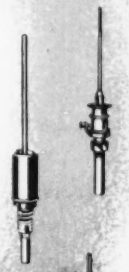


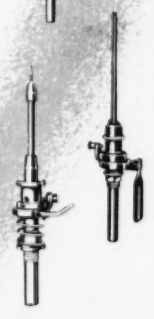
ROLLER BEARING SPINDLES

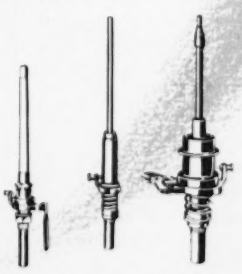
with FULL-FLOATING FOOTSTEP BEARING

Millions in Use



Year by year since 1942, more and more mills have been using Marquette Spindles as replacements and on new frames. Marquette Spindles not only increase production through efficient operation at high speeds, but also cut costs by their savings in power, tapes and lubricant.





- *FOR ALL TEXTILES:* COTTON, SYNTHETICS, WOOL AND WORSTED

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The Marquette METAL PRODUCTS COMPANY

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Largest textile mill circulation in the world

You will want more than Cold Cash IN 1954

No matter which way things are heading in '54, your business will benefit if you ask yourself these two questions—and then act accordingly.

1 **Have you recently looked at what your present source of ready capital gives you—beyond cold cash?**

2 **Have you fully considered what an alert factoring service can contribute toward increasing either your volume or profits as conditions warrant?**

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A basic factoring service, like handling your bookkeeping and collection problem. But Commercial Factors Credit Service also keeps one eye cocked at your sales graph . . . looking for more desirable accounts . . . advising on elimination of undesirable accounts . . . spotting areas of greater potential for you. That's the positive side of credit checking!

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Knowledge of Your Production Problems

One result of our 125 years' experience is an understanding of the importance of gearing production to actual sales opportunities; i.e.: number of styles and proper quantities.

Contact Officers

C.F.C. staff officers of long experience are ready at all times to give this advice and counsel. This service goes far beyond basic factoring or credit checking.

A Commercial Factors Corporation representative can give you a more complete picture of how factoring can fit profitably into your business operation—and give greater force to your selling efforts.

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Anti-Friction

for

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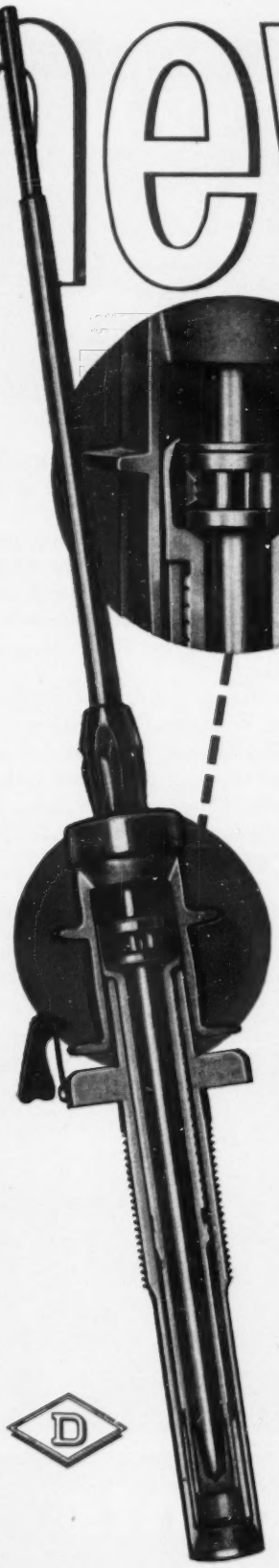
- SOLID ACORN
- BAND DRIVE
- TOP DRIVE
- TAPE DRIVE



Outstanding in World Spindle manufacture . . . inexpensive and completely reliable. Note these mill proven features:

- LOW COST
- REDUCED OILING CYCLE
- DECREASED VIBRATION
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- ALL STEEL BASE CONSTRUCTION
- RUST-RESISTANT FINISH

Cost savers like these belong in your mill operation. Draper offers you a complete line of filling and warp Anti-Friction spindles for use with wood bobbins.

NEW TOP DRIVE SPINDLE
Large Anti-Friction and Medium Anti-Friction constructions.

LARGE ANTI-FRICTION SPINDLE
With Stimpson Clutch — Can also be furnished with Thompson Clutch and Cap.

DRAPER CORPORATION

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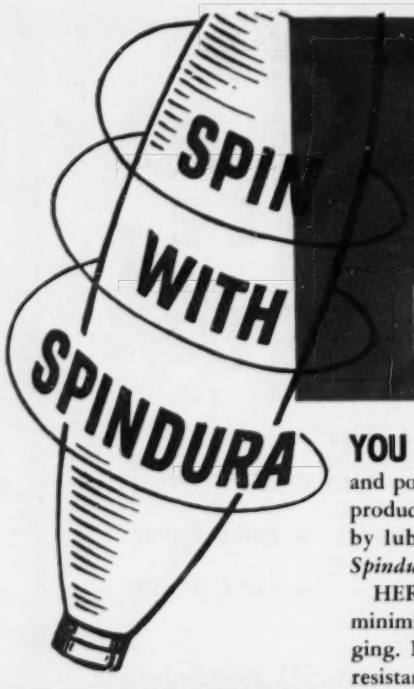

FOR BETTER YARN AT LOWER COST

YOU CAN reduce maintenance costs and power consumption — and increase production of cleaner, smoother yarn — by lubricating spindles with *Texaco Spindura Oil.*

HERE'S WHY: *Texaco Spindura Oil* minimizes vibration, hunting and lagging. Reduces ends down. It has extra resistance to oxidation, thickening and gumming—eliminates "drag" to assure full-speed operation with heavy packages, less power consumption. In addition, it won't atomize or fog—thus, yarn comes through cleaner.

There is a complete line of *Texaco Spindura Oils* to meet all spindle manufacturers' requirements for effective lubrication of spinning, throwing, spooling and twisting spindles.

In high-speed, grease-lubricated, antifriction bearings, use *Texaco Regal Starfak.* It assures longer lasting protection, lower upkeep costs. For effective fibre conditioning, use *Texaco Texspray Compound.*

Let a Texaco Lubrication Engineer help you to increase production and lower costs in your mill. Just call the nearest of the more than 2,000 Texaco Distributing Plants in the 48 States, or write The Texas Company, 135 East 42nd Street, New York 17, N. Y.

TEXACO

TEXACO Lubricants

FOR THE TEXTILE INDUSTRY

ABC NBP BPA

Textile Industries

Vol. 118, No. 6
June, 1954

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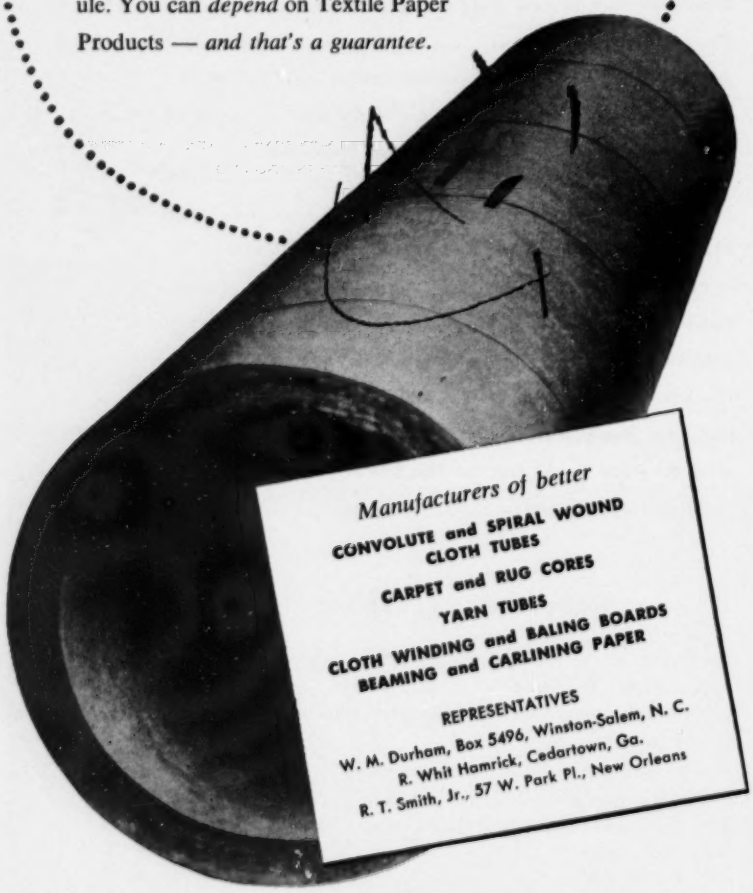
Let's get our heads together and work out a delivery schedule that ties right in with your production schedule. You can *depend* on Textile Paper Products — *and that's a guarantee.*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Shorts and Remnants

► Vacation time! Everyone thinks of taking a breather, except those engaged in the battle of the fibers. Cotton took the first round in 1954 with this arrow-in-the-back: "Despite all the claims and bally-hoo, the cold fact is that the rayon industry has not produced a fiber which is sufficiently wanted at the retail counter to keep its machinery busy." Look for germ warfare next.

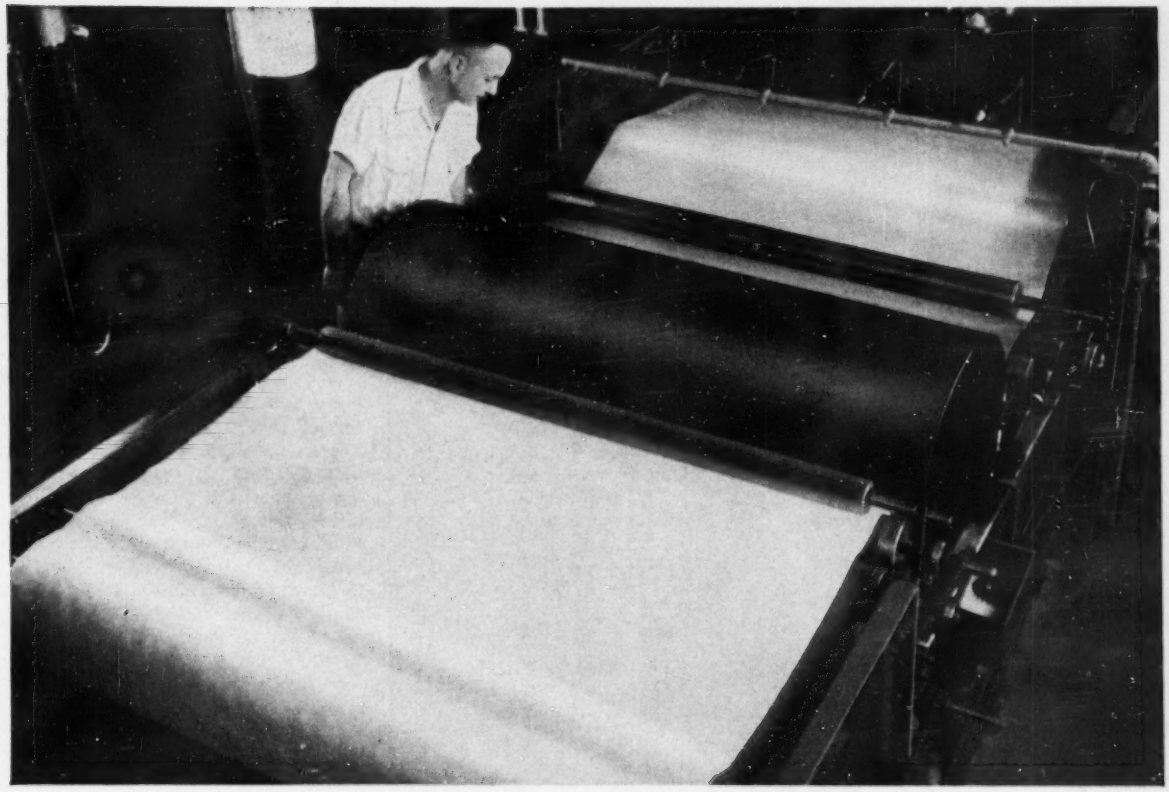
► But the year isn't over for rayon. Already solution-dyed acetate comes up with a new type of fancy golf umbrella for weather-defying linksmen. And without even mentioning King Cotton, a release points out that the umbrella fabric is color-fast when exposed to rain and is highly resistant to mildew. That's real selling for a rainy day.

► While cotton and rayon and wool have their private and public bouts, the hosiery industry quietly consolidates its position by telling the ladies how to get longer life out of their stockings: Don't put them in the washing machine. Save a week's supply and then wash by hand; it takes very little more time to wash seven pairs than it does one, and only one-seventh the amount of soap is required—also, the hose aren't hanging in the bathroom every night. (Note the subtle selling here; it is taken for granted that the lady has at least seven pairs of hose.) By the way, what happened to chlorophyl sheets?

► Styling, designing, selling — that's the order of the day. Even the salt tablet for hot weather days is new and improved and of different color. Opinions are changing, too, on whether industry can talk itself into a depression. Although there are two sides to the argument, many agree that continually harping on bad business may not make business worse, but neither does it make business any better.

► 'Tis especially bad for a mill's salesman to speak of poor markets. The buyer who signs the salesman's order immediately assumes responsibility for the selling. If things are as

THIS IS HOW non-woven fabric is made. The fibers are saturated and bonded by CHEMIGUM LATEX plus other materials. The result is a fabric that is unusually soft and flexible with uniform strength in every direction. Photo courtesy of West Point Manufacturing Company.



THIS IS THE LOOM

for making high-strength fabric with CHEMIGUM LATEX

YOU'RE not seeing things! There is no loom when you make *non-woven fabric* with CHEMIGUM LATEX. This aqueous, butadiene-acrylonitrile copolymer dispersion eliminates weaving. It permanently bonds random fibers into a smooth, porous, uniform fabric in a fast, simple, saturating and bonding process.

Aside from the need for saturating equipment which is not much different from a slasher, CHEMIGUM LATEX readily fits into the average textile plant. It is easily compounded and handled. No complicated mixing, stability, toxicity or solvent storage and recovery problems are involved in giving you an unusual product of wide application.

Non-woven fabric made with CHEMIGUM LATEX combines high gauge-weight ratio and high, multidirectional strength with a soft, pliable hand. Typical uses are as a backing for plastic sheeting, as a filler in plastic laminates, as a replacement for felt and in tablecloths, desiccant bags and filter cloths. For details, write to: Goodyear, Chemical Division, Akron 16, Ohio.

CHEMICAL GOODYEAR DIVISION

Chemigum, Pliobond, Pliolite, Plio-Tuf, Pliovic—T. M.'s The Goodyear Tire & Rubber Company, Akron, Ohio

Use-Proved Products—CHEMIGUM • PLIOBOND • PLIOLITE • PLIO-TUF • PLIOVIC • WING-CHEMICALS—The Finest Chemicals for Industry

Here's looking at you
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TOLEDO
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NEW...
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New Toledos provide utmost reading convenience for operator . . . help you control costs with greater *speed* and *accuracy*. On all new Toledos with swivel heads the dial can be installed to face any of eight directions in relation to the platform; also with full 360° swivel.
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Today more than ever

HEADQUARTERS FOR SCALES

Shorts and Remnants

bad as the salesman contends, then the buyer may prefer to remain the buyer, letting the salesman continue to sell.

► But things haven't been bad everywhere. At one of those fancy textile convention spots, the guest handed the hotel cashier a $5 bill and asked for change. Cashier's reply: "Mister, you've already got change!"

► It may be part of the sales gimmick, but the rumor that men's evening shirts will be trimmed with lace and that knickerbocker trousers are being revived, is going to be a tough one to confirm. Some of our better-known he-men are well-dressed; e.g., Stan Musial (among 10 best-dressed fathers of 1953), Joe DiMaggio, Rocky Graziano, Jack Dempsey, and Gene Tunney—right clothes at the right place, but no lace!

► Here's a gimmick for you, should sales fall off or the union organizer prove a better salesman than you are; it's a "headache pencil" containing aspirin tablets in the barrel. But if the union does finally win out, leave this message with your employees: You can't have security and opportunity at the same time.

► The coffee folks did some selling on Americans—before raising prices. Remember the radio jingle "time out for a coffee break"? Well, every morning now 35 million Americans stop work for coffee (at an increased price) and no longer can we kid our British cousins about stopping work for tea. The sales gimmick worked, and we buy more coffee.

► We'll get back to selling, but this card from Texas confuses us: "Do you still have some reprints left? Please advise." Come to think of it, we do have a reprint or so, but we also have seven publications, each with an occasional reprint. Which publication, and which reprint? And by the way, where in Texas and to whom should we send the reprint?

► One of our good subscribers in a foreign country seems to have got into this subscription deal just 21 years late. He writes that he regrets he didn't start subscribing to the valu-

KYRO AC

SAVES

WOOLEN MILL

$73,100

IN A SINGLE YEAR!

Woolen mills in increasing numbers are reporting important savings in their processing costs—and more saleable fabrics—after changing to Kyro AC, a new type of modified amine condensate product with soap-like action on wool. Here is a typical example:

GIVES MORE SALEABLE FABRICS, TOO!

$5600 SAVED
through a 15% reduction of fulling time

$60,000 SAVED
through a 40% reduction in flocking

$7500 SAVED
through the lower initial cost of Kyro AC

We welcome the opportunity to show how Kyro AC can effect similar savings in your mill. Get the full story of Kyro AC from your Procter & Gamble salesman, or drop a line to

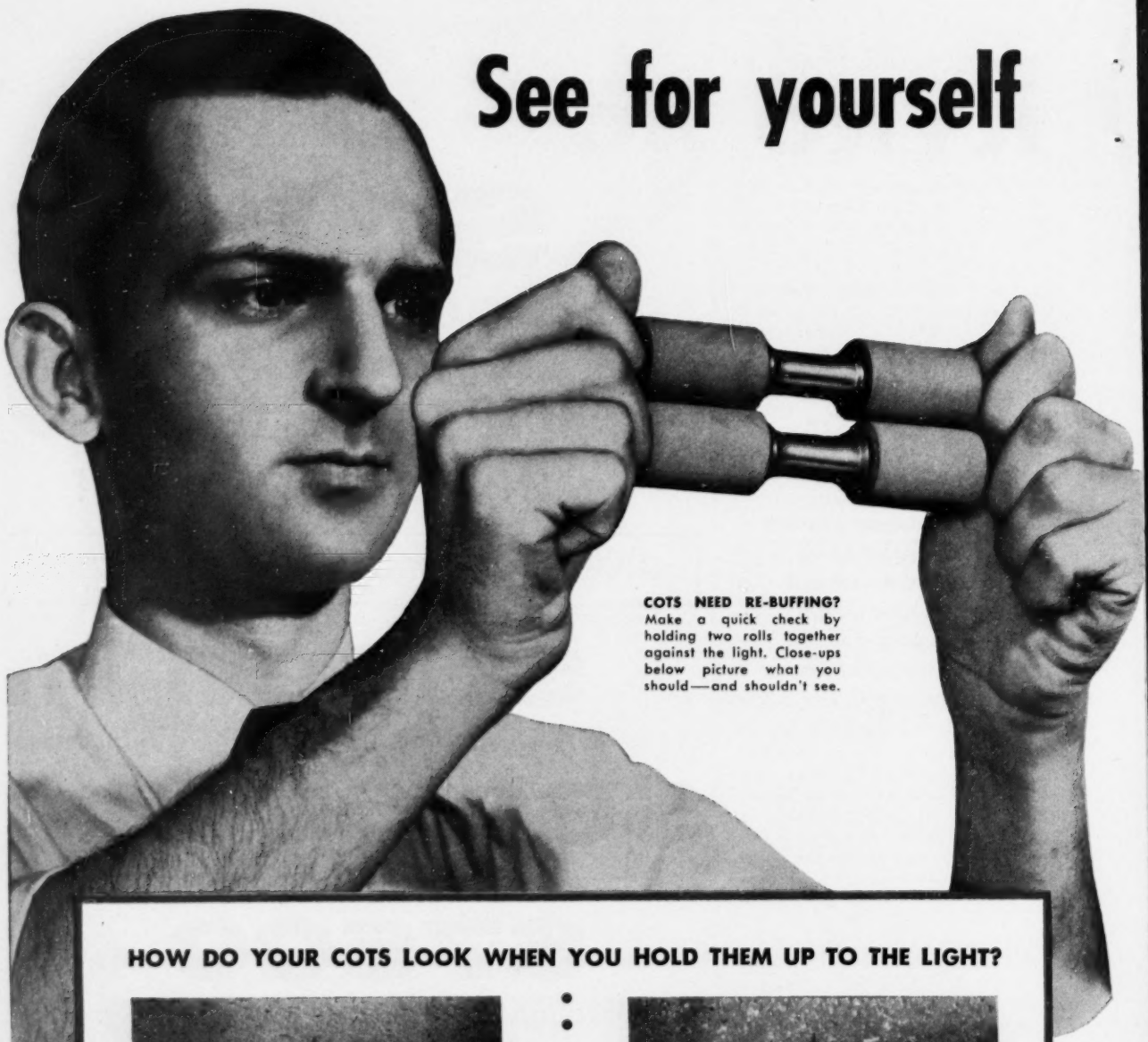
PROCTER & GAMBLE

TEXTILE FINISHES SALES DEPARTMENT
CINCINNATI 2, OHIO

Makers of Profine, Kyro AC, Olate, Proxol, Proxol-T and Orvus products.

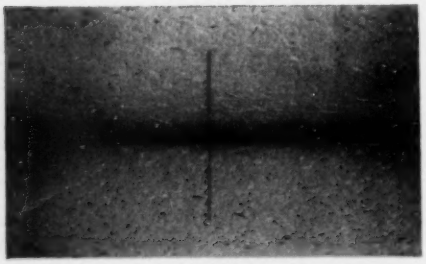
● Have you received a copy of our recently published booklet on Fulling and Scouring Wool Fabrics? A postcard request will bring it to you.

See for yourself

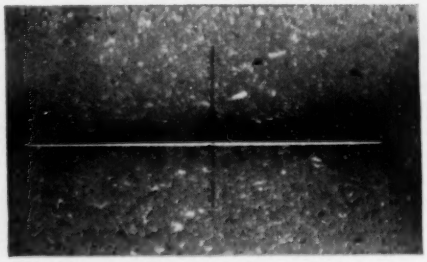


COTS NEED RE-BUFFING? Make a quick check by holding two rolls together against the light. Close-ups below picture what you should—and shouldn't see.

HOW DO YOUR COTS LOOK WHEN YOU HOLD THEM UP TO THE LIGHT?



O. K. These Armstrong's NO-742-S Cots have been on the frame 11 months, yet need no rebuffing. Performance like this has convinced mill men that the NO-742-S stops serious eyebrowing, requires only a minimum of re-buffing to maintain yarn quality.



NEEDS RE-BUFFING. If your inspection shows that cots are hollowing out or grooving prematurely, they're probably not controlling yarn so well as they should. Install NO-742-S Cots for minimum re-buffing and maximum eyebrow resistance.

These photographs are 5½ times actual size.

ARMSTRONG'S

how Armstrong's NO-742-S Cot

RESISTS GROOVING

SPINS QUALITY YARN

Quick test shows how much longer these eyebrow-resistant cots wear

For a fast, on-the-spot check on how well your cots are wearing, try this:

Take two rolls off your frames, put them together cover to cover, and hold them up to the light. If you can see daylight between them, your cots probably are not giving you good yarn control. Because this test shows double the actual wear, it gives a magnified view of any hollowing or grooving and helps you detect premature cot failure.

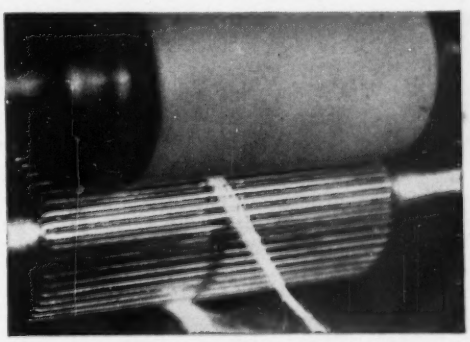
One of Armstrong's customers who made this test told us afterwards, "I was pleased to discover I couldn't see a bit of light between Armstrong's NO-742-S Cots. They'd been in constant use for almost a year and **still didn't need re-buffing!** They were running exceptionally clean, without slicking or glazing."

In most spinning rooms, NO-742-S Cots keep their high-friction "bite" for months. In fact, re-buffing is seldom necessary before the cots have run a year.

Controls eyebrowing. Armstrong's newest Accotex® cot has been mill-tested for over two years on all types of spinning equipment and on many different types of yarn. In every test, results were the same. NO-742-S Cots eliminated eyebrowing as a serious problem.

The thousands of tiny "teeth" on the spinning surface of this lap-resistant cot do the trick. They pick up the waste fibers and pack them well back on the clearers where they belong. As one mill man put it, "I can pick out the rolls covered with these new cots without ever lifting a clearer board. When all the others have eyebrows these new ones don't!"

Ask your Armstrong man about this new NO-742-S Cot. He'll be glad to get you samples for your own spinning frames. Write Armstrong Cork Company, Textile Products Department, 6506 Ivy Street, Lancaster, Penna. These new Accotex cots are available for export.



WITH REVOLVING CLEARERS, USE THE LAP-RESISTANT J-490 COT

For spinning fine yarns, and for any count yarn with revolving clearers, Armstrong's J-490 Accotex Cots have proved ideal in hundreds of mills. Special electrolytes added to the J-490's long-wearing synthetic rubber composition make it highly resistant to lapping. The J-490 runs exceptionally clean, too. If lapping's a problem, call your Armstrong man today and arrange for a test side of J-490 Accotex Cots.

ACCOTEX COTS — NO-742-S • J-490 • NC-727

REPUTATION
IS MIGHTY IMPORTANT . . .

When Selecting An All-American Halfback and When Selecting An Electrical Contractor For Your Mill

You've got to have a reputation in order to make All-American . . . and you've got to be a good football player to come by such a reputation.

The same thing is true as far as electrical contracting goes. A firm which has done a good job over the years will automatically enjoy a good reputation.

Wherever quality textile electrical contracting is being discussed, J. M. CLAYTON COMPANY will be mentioned. Reason?

We've served the textile field for 48 YEARS!

J. M. CLAYTON CO.

CONTRACTING ELECTRICAL ENGINEERS

ATLANTA, GEORGIA

Shorts and Remnants

able magazine earlier, and could we get him articles from 1933 on. The man really wants to catch up on his reading!

► Bet you're just waiting for us to tell you about our Addressograph machine getting stuck so that a subscriber got two sacks of circulation renewal notice mail, aren't you? Didn't happen that way at all! The TI stencil list became crossed with another Smith publication, "Southern Hardware," and because of a fishing tackle article in that issue, the mills began subscribing to HARDWARE on TI renewal notices. Editors find out reader interests the hard way; look for more fishing articles in TI.

► Strictly textile items: A Galapagos turtle at Brookfield Zoo in Chicago is a cento-septarian (177 years); (this is the kind of information that supervisors, superintendents, and mill managers should have at hand when discussing the day's work with the mill president).

Successful business men have more trouble with success going to their stomachs than to their heads.

Life begins at forty—but not for those who went like sixty when they were twenty.

Ole Poovey wonders why people worry about missing their station in life; somebody will tell them where to get off.

The production of sulfa drugs is second only to aspirin.

Advertising copy is like a girl's bathing suit (brevity is the soul of wit).

The tax program this year, in conjunction with the January reductions, is the biggest tax reduction ever approved by any administration in an entire 4-year term.

The cheetah is the world's fastest 4-legged animal (75 miles per hour).

In a regular football game the ball is actually in motion less than 5 minutes.

It takes a model from 38 to 52 seconds to change hosiery.

World's highest tides (60 feet) are in the Bay of Fundy between New Brunswick and Nova Scotia.

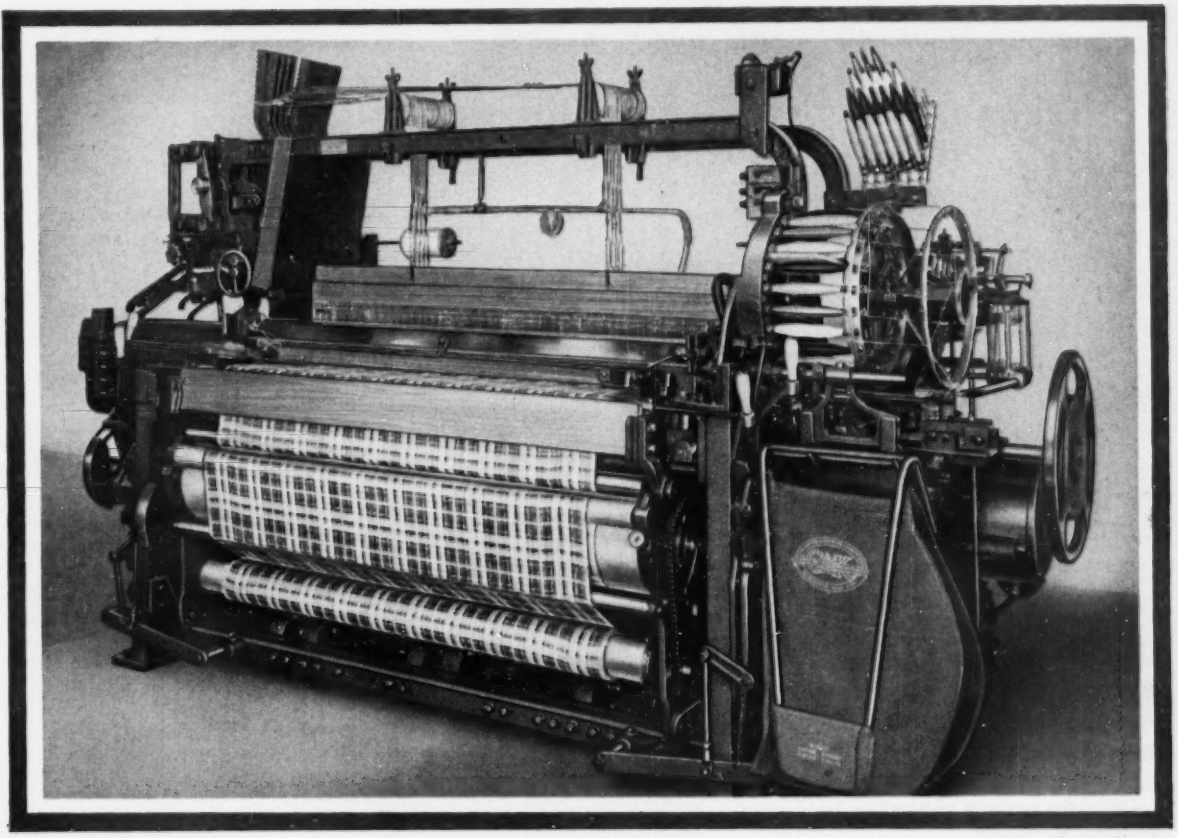
"Keep an eye on TI" is a slogan in "Fortune" magazine by Texas Instruments, Inc. Similar to Ole S&R's "Keep Your Eye on TI."

A conference was recently held in

Here's what C&K's

New 4X1 Filament Loom

will do for YOU...



New C&K Multi-Purpose Looms give you 4 definite advantages:

1. Lower Maintenance Cost: Greater weight and rigidity of loom-frame means far less vibration. Many more parts are doweled into place . . . settings are retained. New cone picking motion cuts down-time and increases efficiency.

2. Increased Work Assignments: Better control of both filling and warp . . . together with decreased maintenance costs . . . should make possible an increase in work assignments.

3. Greater Flexibility: New M-P Looms are readily and widely convertible. Any motion may be applied to the basic frame . . . and all parts of all motions have been designed to fit onto this frame.

4. Better Quality of Cloth: With both filling and warp under better control, better quality of cloth is assured.

The loom shown above . . . for weaving 4-color filament dress goods automatically . . . is one of 5 new C&K Multi-Purpose Looms that give you greater flexibility and versatility than any weaving equipment built today. For details and prices, see C&K.

This "Invisible Trademark" Stands Back of the Trademarks of the World's Finest Fabrics . . . which are **WOVEN** Fabrics.

Crompton & Knowles LOOM WORKS

WORCESTER 1, MASSACHUSETTS, U. S. A.

Philadelphia, Pa. · Charlotte, N. C. · Allentown, Pa.

Crompton & Knowles Jacquard & Supply Co., Pawtucket, R. I.

Make Light Work of HEAVY PACKAGES

Consider these four advantages of engineered package conveyors and what they can do for you

1. Lower the expense of handling in receiving and storing.
2. Synchronize delivery of materials and components in production processes.
3. Facilitate preparation of the products for shipping.
4. Modernize the shipping dock and delivery to carriers.

At your convenience an Alvey engineer will visit your plant to help you determine how conveyors can save money and increase production for you. Write for an appointment.

ALVEY CONVEYORS ARE APPLICATION-ENGINEERED... THEY ARE DESIGNED TO ACCOMPLISH A PARTICULAR PURPOSE IN YOUR PLANT

ALVEY

ALVEY CONVEYOR MFG. CO.

9306 Olive Street Road • St. Louis 24, Mo.

BRANCH OFFICES IN ALL PRINCIPAL CITIES

Shorts and Remnants

India to consider ways to reduce prices of cloth.

► And now, an SOS from the editors. If the subscriber in Heidelberg, Germany, who wants further information on the random web process will tell us his name, we'll be glad to serve. He forgot to sign his request. The same goes for the fellow in Union City, N. J. Should the request have been from Ethiopia, we could have answered because there's only one subscriber there. But from Canada, the subscribers are numerous. Even the Iron Curtain has TI readers.

► We didn't celebrate National Leave Me Alone Week recently. In fact, the business department reports the largest number of inquiries on record that week for market data on the textile industry. Must be getting ready for business. Watch for those sales gimmicks!

► For employees contemplating a strike there is the "Personal Strike Computer" prepared by Harmon E. Snoke. It adds up the cost of strikes in dollars and cents to the average employee. Strikers already know they'll never catch up; the computer just puts the fact in writing.

► When sending in a request for reprints recently, another mill man (foreign) stopped us. Under the place for "title" on the coupon, he wrote "mister." That removed any doubt from our minds.

► Happy times on your vacations, all you misters, and Keep Your Eye on TI when you get back.

Dissertation on Selling

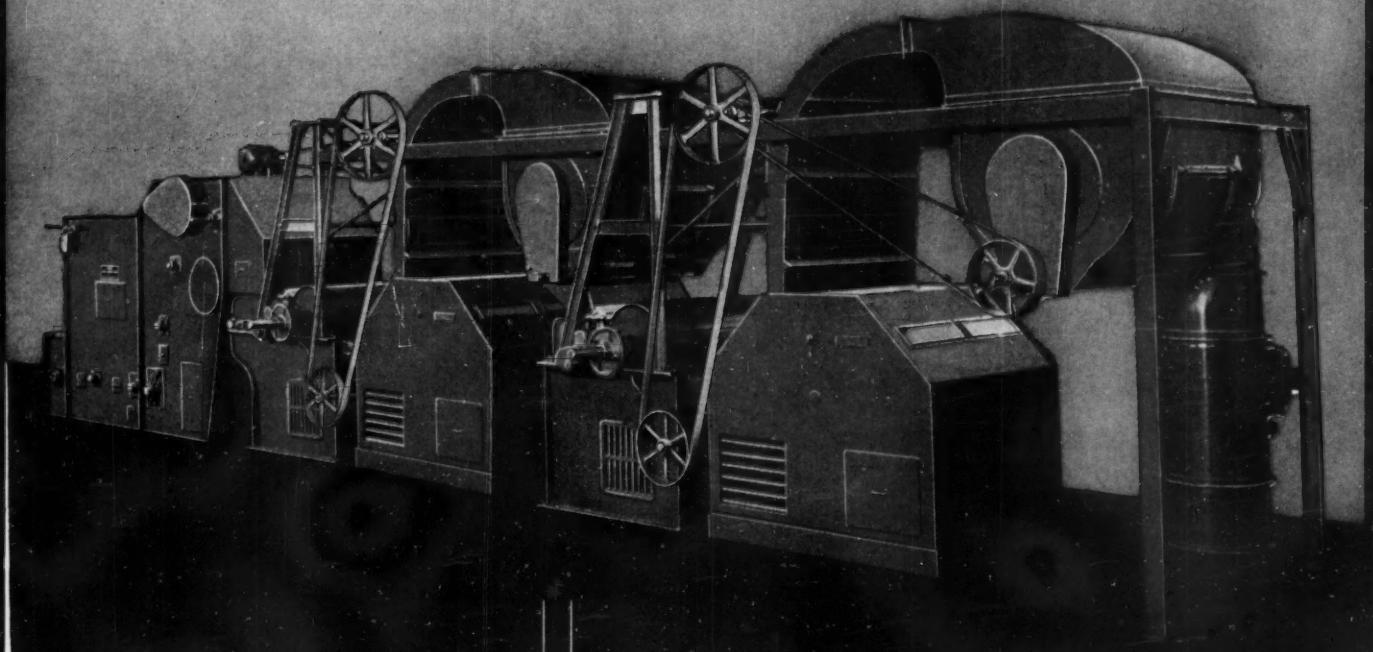
(Less commercial than usual)

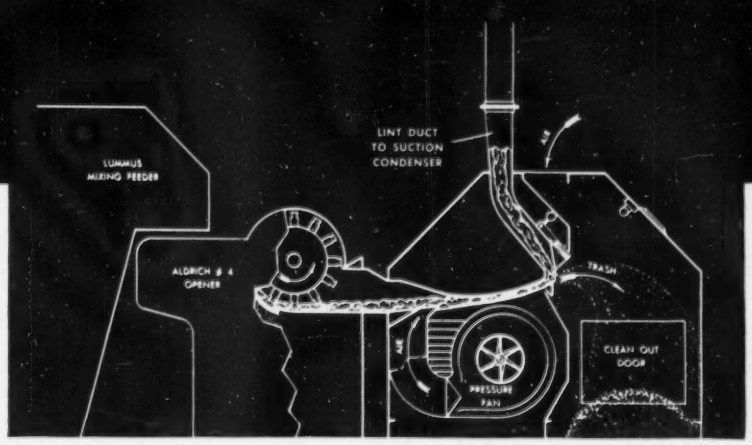
► Since Ole S&R got off on a selling tack this time, and heaven knows why because it certainly wasn't planned, he might as well point out that modern sales psychology, as much as it is needed, is really not so modern when you study some of the sales methods and note that the tricks used in selling today go as far back as 2500 B.C.

Dr. Stanley C. Hollander at the University of Pennsylvania described some of these aids in his "Sales Devices Throughout the Ages."

As early as 2500 B.C. trading com-

THE FIRST *Really New* COTTON CLEANING MACHINE IN ABOUT 75 YEARS





If you have not seen these machines in operation, we would like to show them to you.

- ★ No saw cylinders
- ★ No neps made while cleaning
- ★ No harsh handling of the cotton— the trash is removed with air currents
- ★ No good fiber taken out with the trash

ALDRICH-LUMMUS CLEANING SYSTEM

Made by LUMMUS COTTON GIN CO. Columbus, Ga. *and* ALDRICH MACHINE WORKS Greenwood, S. C.

Sold and Installed by Aldrich Machine Works Greenwood South Carolina

Only the exclusive

PROCTOR TENTER HOUSING

offers such features

MAXIMUM
- PRODUCTION
- AIR VELOCITY
- UNIFORMITY
- FLEXIBILITY
- ECONOMY

This Proctor Tenter Housing is completely redesigned to fulfill your requirements. It offers you many features and operating advantages never before furnished in this type of equipment.

PRODUCTION—The Proctor Tenter Housing has the greatest drying capacity per foot of length ever offered to the textile industry—from 50% to 100% more drying capacity than conventional tenter housings.

AIR VELOCITY—The Proctor Tenter Housing provides maximum air movement with minimum horsepower.

UNIFORMITY—Air circulation is arranged to assure a uniform distribution of air from center to side of the material and throughout the entire length of the machine.

FLEXIBILITY—It is now possible to handle your complete line of fabrics with one machine because of the flexibility provided in Proctor's design of nozzles and air flow. This allows you to vary the top and bottom nozzle velocities to suit all materials.

ECONOMY—The operating cost including labor, power and all other costs is appreciably less per yard of cloth output. This saving can pay for the equipment in as little as two years.

For more information write today for our Bulletin #395.

PROCTOR & SCHWARTZ • INC.
PHILADELPHIA 20 • PA.

Shorts and Remnants

panies were organized, but, of all things, selling had reached such a point that it required government regulation. Seems we've heard that more recently than 2500 B.C.

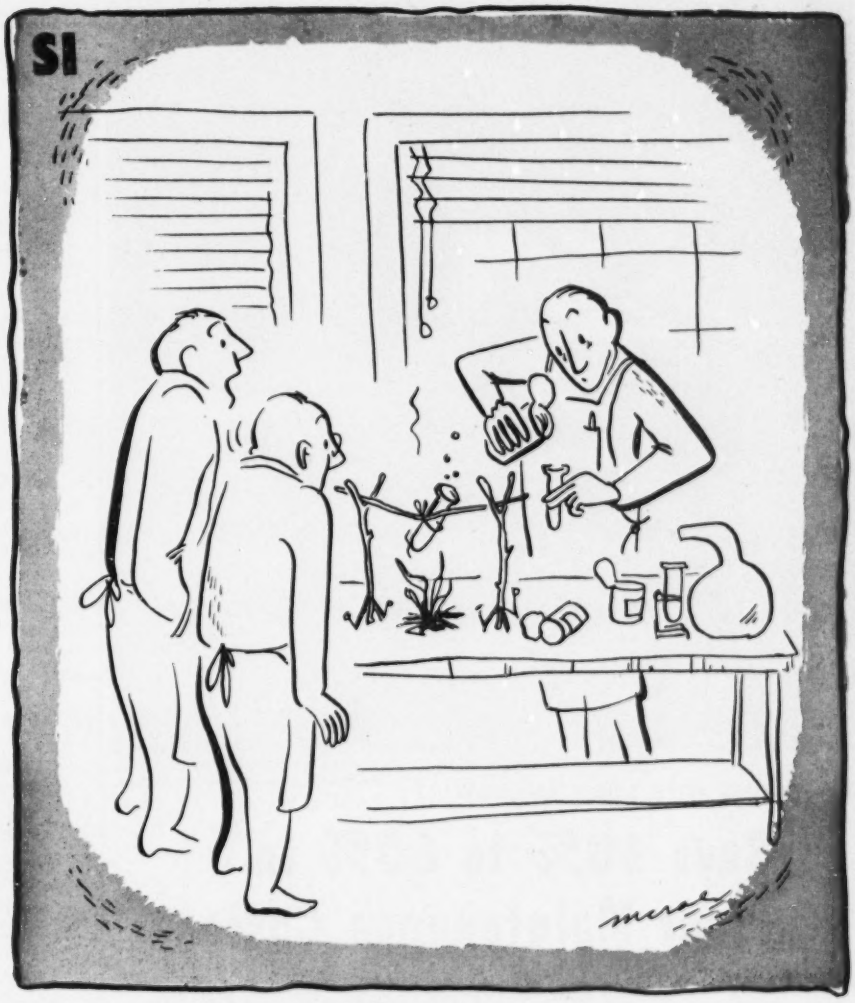
Independent salesmen soon learned that they could cut expenses (padding expense accounts was a later development) by banding together to make calls in wagons on a share-the-cost basis, developing to the point of the caravan that camped and waited for customers. We still have this today in the traveling trade shows, and it has reached its zenith in the textile industry; textile suppliers haul samples of their wares to Atlantic City and Greenville at certain intervals, whereupon the mill men troop there to gaze in wonder at what the suppliers have wrought and occasionally buy a pickerstick or a gross of 3/16" screws just to prove they actually went there on business.

The English really made salesmen *sales*men when they gave them samples to tote instead of actual goods to be sold; this took them out of the category of glorified teamsters, and permitted them to concentrate on selling instead of driving mules. These sample toters were ridiculed, but other firms had to follow suit when the sample-carrying salesmen got all the business.

Early salesmen had much to fear on the road from bandits, wild animals, and even the local drugstore cowboys—so they were required to carry arms. In the 13th and 14th centuries the merchant guilds required their members to carry a bow and 12 arrows, and if a member of the salesmen's party were captured, the others were required to ransom him.

In the rough and ready early days of Missouri, any brave salesman who could make the trip, carry a pair of guns, and get out again could give his house a good sized order.

There was also a time in England when advertising and sales promotion were considered deterrents to general business—belief was there could only be a certain amount of trade, and anyone who tried to get more business must be taking it away from someone else. Not so across the channel; the French were out offering samples of their wares and criers were on the streets shouting the merits of their wines (probably the



"They Say He Learned Chemistry During the Depression . . ."

Not everyone can afford the research budget of Uncle Sam's atom bomb project.

Ingenuity, interest, specialization and experience we find to be the invaluable and irreplaceable ingredients for getting the most out of a research program.

Based on these, SEYCO research has kept SEYCO products in the lead.

HEADQUARTERS FOR TEXTILE CHEMICALS

SEYCO Products

WARP SIZING
- Softeners
- Binders
- Penetrants
- Ty-In Penetrants
- Shuttle Dressing

WET PROCESSING CHEMICALS AND AUXILIARIES
- Dye Assistants
- Penetrants
- Rewetting Agents
- Sanforized Fabric Oils
- Detergents
- Scouring Agents
- Softeners

NIAGARA TWIST-SETTER
- Yarn Conditioning Penetrants

SEYDEL-WOOLLEY & CO.

TEXTILE CHEMICALS

748 RICE STREET • ATLANTA, GA.

SEYCO

PENETRANTS • SIZING • SHUTTLE DRESSING • SOFTENERS • ALKALIS • TWIST SETTER MACHINES •

6 TIMES A YEAR is only buffing needed for this Tennantized weave room floor.

3 REASONS WHY YOU CAN NOW

Save 30% to 60% in Floor Maintenance Costs

Important NEW improvements in the TENNANT System now make it possible—a saving of 30% to 60% in floor care costs annually, compared to 5 years ago. Here's why, as reported by many mills:

1. You use 50% less manhours today in cleaning a TENNANT-treated floor because its dirt-resistance has been almost tripled. You buff only 1/5 to 1/10 as often . . . need only a dry mop for daily cleaning.

2. Floor seals last 4 times longer today because they are more wear-resistant, stand up better under oil, grit and dirt. Bright, lustrous finish is easily renewed without need for sanding.

3. You save time in problem areas, like weave rooms, with new TENNANT materials that resist humidity, starch, discoloration, etc. Saves manhours (see photo above). *Write today for details; ask for estimate of savings possible in your mill.*

TENNANT
ESTABLISHED 1870

G. H. TENNANT CO.
2524 N. 2nd Street
Minneapolis 11, Minn.

FLOOR MAINTENANCE SYSTEM

Shorts and Remnants

forerunner of today's radio commercial).

Later on salesmen found it profitable to amuse customers, to the point of carrying Mexican jumping beans (today's salesman carries golf clubs and jiggers).

And so through the ages came samples, testimonials, sales demonstrations, exhibitions, presentations, visual aids—nothing quite new. Until one day a fellow started a trade publication—and to bring it closer home, he started a textile trade publication—that was the answer to the salesman's prayer. Through it he was able to reach the man he wanted to sell. TI spelled backward was IT.

(An unintentional commercial; it slipped up on us; selah.)

Index

" . . . please send us an index of articles in your publication for the years 1947 through 1951. . . . "

PERRY G. MYER
Quality Control Dept.
Russell Mfg. Co.
Alexander City, Ala.

► Extra indices are available. Annual index goes to subscribers loosely inserted in December issue.

Work Loads

" . . . ask you kindly to send us a reprint of the article on 'Work Load Calculations for Winding Machines' by Jesse W. Stribling. . . . "

(Finland)

► Copies of article available from TI or Universal Winding Company.

Training Seamers

" . . . please send us six copies of the article 'Training Seamer Operators' which appeared in the April 1953 issue. Would you please advise us the cost of 200 of these reprints?"

A. S. THOMPSON, JR.
Supersilk Hosiery Mills
London, Canada.

► Our supply depleted due to heavy demand. Mills wishing to reproduce in quantity for distribution to employees, contact the editors for an inexpensive method.

Cover for Roving

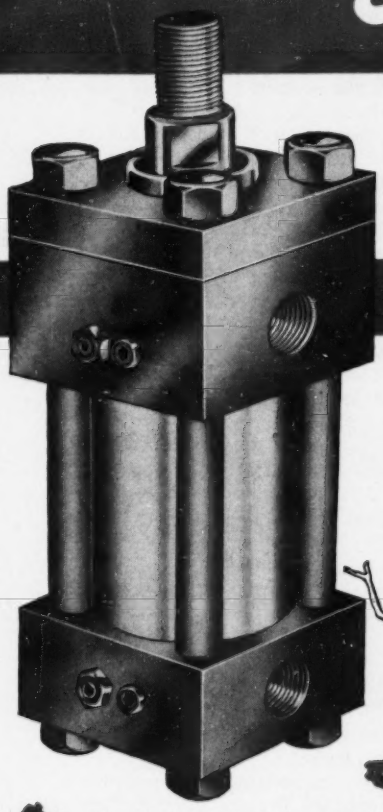
" . . . in your March issue, page 129, it shows yarn covers for roving storage areas. We would like to know

Augmenting Miller's Quality-Famous Line of "Custom-Built" Cylinders...

Miller Stock AIR AND HYDRAULIC CYLINDERS

Available for *Immediate Delivery*...

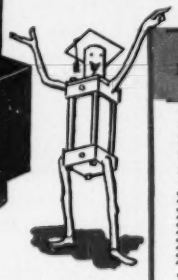
in the popular sizes, mountings and prices listed below



Any of the interchangeable "stock" mountings illustrated can be easily attached to Basic Model 53 with the tie rod nuts in a few moments. This gives you a wide selection of models for **immediate use** — and permits easy conversion to other models for **future re-use.** You save delivery and production time, investment cost and storage space.

ORDER DIRECTLY FROM THIS LIST...

"Stock" Cylinders are shipped as Basic Model 53. Your selection of Mounting Attachments are shipped (unattached) with cylinders. Prices are F.O.B. our plant.



Miller "Stock" Cylinders fully meet the J.I.C. Standards and are identical to Miller "Custom-Built" Cylinders in design and construction.

"Stock" Air Cylinders are for 200 psi operation, "stock" hydraulic cylinders for 2000-3000 psi operation. Piston Rods of "Stock" Cylinders are "Style No. 2 Standard."

For complete descriptive and dimensional data on both "Stock" and "Custom-Built" Miller Cylinders, write for Bulletins A-105 and H-104 sent FREE on request.

Sales and Service From Coast to Coast!

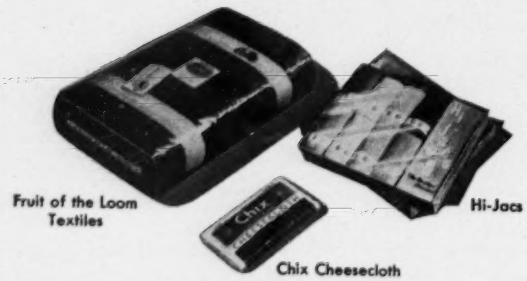
Consult your local directory or write us direct for the name of our representative for your area

			BASIC CYLINDER PRICES ONLY		PRICES OF MOUNTING ATTACHMENTS ONLY					
			Basic Model 53 — Tie Rods Extended Rod End		71 77 — Side or Foot Mounting / Foot Mounting		61 62 — Rod End Flange / Cap End Flange		65 66 86 — Rod End Flange / Cap End Flange / Pivot Mounting	
Bore	Stroke	Cushion	AIR A53	HYD. H53	AIR A77 A71	HYD. H77 H71	AIR A61 A62	HYD. H61 H62	AIR A86	HYD. H65 H66 H86
1½"	2"	Non		$58.50		$2.90		$8.20		$14.35
1½"	4"	Non		60.70		2.90		8.20		14.35
1½"	6"	Non		62.90		2.90		8.20		14.35
1½"	8"	Non		65.10		2.90		8.20		14.35
1½"	11"	Non		68.40		2.90		8.20		14.35
2"	2"	Non	$37.70		$2.05		$4.60		$6.90	
2"	4"	Non	39.40		2.05		4.60		6.90	
2"	6"	Non	41.10		2.05		4.60		6.90	
2"	8"	Non	42.80		2.05		4.60		6.90	
2"	11"	Non	45.35		2.05		4.60		6.90	
2"	3"	Both	62.05	94.50	2.05	2.95	4.60	8.55	6.90	17.05
2"	5"	Both	63.75	97.00	2.05	2.95	4.60	8.55	6.90	17.05
2"	7"	Both	65.45	99.50	2.05	2.95	4.60	8.55	6.90	17.05
2"	9"	Both	67.15	102.00	2.05	2.95	4.60	8.55	6.90	17.05
2"	13"	Both	70.55	107.00	2.05	2.95	4.60	8.55	6.90	17.05
2½"	2"	Non	41.45	73.30	2.25	2.95	4.80	9.00	7.55	19.80
2½"	4"	Non	43.35	76.00	2.25	2.95	4.80	9.00	7.55	19.80
2½"	6"	Non	45.25	78.70	2.25	2.95	4.80	9.00	7.55	19.80
2½"	8"	Non	47.15	81.40	2.25	2.95	4.80	9.00	7.55	19.80
2½"	11"	Non	50.00	85.45	2.25	2.95	4.80	9.00	7.55	19.80
3¼"	3"	Both	77.80	126.85	2.55	4.35	6.35	11.75	9.90	23.10
3¼"	5"	Both	79.80	129.85	2.55	4.35	6.35	11.75	9.90	23.10
3¼"	7"	Both	81.80	132.85	2.55	4.35	6.35	11.75	9.90	23.10
3¼"	9"	Both	83.80	135.85	2.55	4.35	6.35	11.75	9.90	23.10
3¼"	13"	Both	87.80	141.85	2.55	4.35	6.35	11.75	9.90	23.10
4"	2"	Non	56.25	106.00	2.85	5.15	6.70	12.90	11.05	26.80
4"	4"	Non	58.85	109.40	2.85	5.15	6.70	12.90	11.05	26.80
4"	6"	Non	61.45	112.80	2.85	5.15	6.70	12.90	11.05	26.80
4"	8"	Non	64.05	116.20	2.85	5.15	6.70	12.90	11.05	26.80
4"	11"	Non	67.95	121.30	2.85	5.15	6.70	12.90	11.05	26.80
5"	3"	Both	98.25		3.15		7.00		12.35	
5"	5"	Both	101.65		3.15		7.00		12.35	
5"	7"	Both	105.05		3.15		7.00		12.35	
5"	9"	Both	108.45		3.15		7.00		12.35	
5"	13"	Both	115.25		3.15		7.00		12.35	
6"	2"	Non	80.60		3.35		7.25		13.55	
6"	4"	Non	84.90		3.35		7.25		13.55	
6"	6"	Non	89.20		3.35		7.25		13.55	
6"	8"	Non	93.50		3.35		7.25		13.55	
6"	11"	Non	99.95		3.35		7.25		13.55	
8"	3"	Both	157.35		3.70		10.55		17.60	
8"	5"	Both	162.45		3.70		10.55		17.60	
8"	7"	Both	167.55		3.70		10.55		17.60	
8"	9"	Both	172.65		3.70		10.55		17.60	
8"	13"	Both	182.85		3.70		10.55		17.60	

Complete Miller "custom-built" line includes: air cylinders, 1½" to 20" bores, 200 psi operation; low pressure hydraulic cylinders, 1½" to 6" bores for 500 psi operation, 8" to 14" bores for 250 psi operation; high pressure hydraulic cylinders, 1½" to 12" bores, 2000-3000 psi operation. All mounting styles available. Also, a complete line of Fluid Pressure Boosters and Accumulators.

MILLER FLUID POWER CO.
(Formerly MILLER MOTOR COMPANY*)*
2042 N. Hawthorne Ave. Melrose Park, Illinois

AIR & HYDRAULIC CYLINDERS • BOOSTERS • ACCUMULATORS
COUNTERBALANCE CYLINDERS



YOU CAN TELL A HAYSSEN-WRAPPED PACKAGE BY THE WRAPPING IT KEEPS!

easy, automatic operation

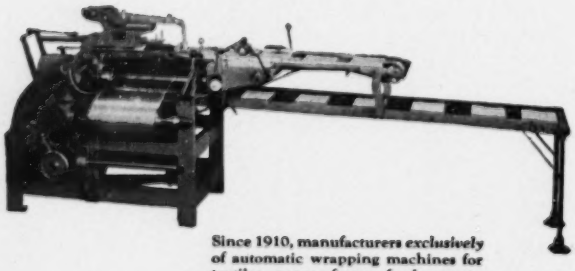
Regardless of size or shape, you get a neat, tight wrap on every package with a Hayssen automatic wrapping machine. *Wrapping's easier!* Also, production men report savings up to 80% over previous wrapping costs.

simple to adjust

No complicated adjustments from size-to-size on a Hayssen. No gears or sprockets to remove or change . . . no need for expensive mechanics to change size, either. So simple the operator does it on the job.

more sturdily built

Hayssen's simple, rugged design, using fewer moving parts, keeps these machines working and saving through years of dependable, trouble-free service. Every moving part is in the open and easily reached for maintenance and cleaning.



Since 1910, manufacturers exclusively of automatic wrapping machines for textiles, paper, frozen foods, meats, vegetables, and many other products. Whatever your product, Hayssen can solve your wrapping problem. WRITE today for more information.

Hayssen MFG. COMPANY

Dept. TI-6, SHEBOYGAN, WISCONSIN

Shorts and Remnants

what this is and where we can obtain some. . . "

R. E. BOAZE
Supt. Card & Spin.
Mooresville (N. C.) Mills

► Others wanted to know too. It is clear plastic sheeting which can be obtained from any dry goods store or mail-order house. When placed over the roving, yarn, or any stock in process, the plastic sheeting protects the stock from dirt and contamination.

Training Article

" . . . while searching back copies of TI for articles on training, I came across a footnote in your August 1953 issue . . . referred to previous article on training and stated that, at that time, a limited number of reprints were available . . . 24-page report on 'Textile Training' originally published in TI in March 1952 . . . if a copy of this reprint is still available I would appreciate one very much. . ."

ROBERT L. THOMPSON
Div. Training Supervisor
U. S. Rubber Co.
Providence, R. I.

Factors Affect

" . . . having read with interest your paper entitled 'Factors Affecting the Spinning Limits' published in TEXTILE INDUSTRIES for August 1953, I would be most grateful if a copy of same could be forwarded to me. . . "

F. BRYANT
Laboratory Manager
Prestige Limited
Victoria, Australia

Pat on Back

" . . . can't resist the temptation to give you a pat on the back . . . makes me very happy to read that your publication has attained the largest coverage in its history and the largest mill circulation of any publication [textile] . . . you are to be congratulated. . . "

LEONA S. BRABHAM
Manager, Southern Office
Victor Ring Traveler Co.
Gastonia, N. C.

2 the Same Month?

" . . . each month when I read TEXTILE INDUSTRIES I have an opportunity to see evidences of your ability as an editor—and yesterday I re-

Easy application of fast colors with Du Pont *Capracyl** dyes for wool

The essentially neutral dyeing, metalized Du Pont "CAPRACYL" colors are applied to wool in a short dyeing cycle. They require little or no chemical aids for exhaustion. This means you benefit from savings in time, chemicals, and labor. And the natural strength, beauty, and resiliency of the wool fibers are protected.

Du Pont "CAPRACYL" dyes offer a combination of good wet fastness and excellent light fastness. You'll find them ideal for worsted men's wear, sportswear, auto upholstery, and carpets, and many other fabrics where exposure to light is an important factor.

Even on "tippy" wool, the "CAPRACYL" dyes cover and penetrate well . . . produce level dyeings with proper application methods.

Du Pont has prepared a booklet, "THE 'CAPRACYL' DYES," with technical information on the properties and dyeing characteristics of these new dyes. For your copy . . . or for help on *any* dyeing problem . . . write E. I. du Pont de Nemours & Co. (Inc.), Dyes and Chemicals Division, Wilmington 98, Del.

*REG. U. S. PAT. OFF.

DU PONT

Du Pont Dyes

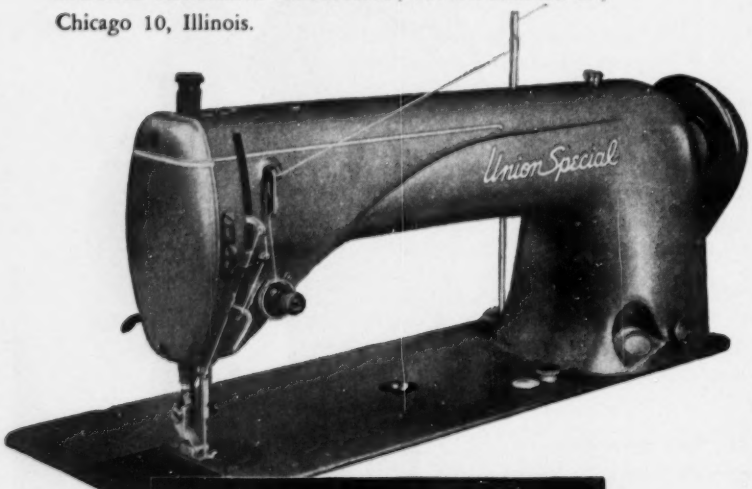
BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

ENGINEERED

for your future!

NEVER before has a general purpose LOCKSTITCH machine been so thoroughly *engineered* for the job of handling modern INDUSTRIAL SEWING REQUIREMENTS! And never has a machine offered users more than the new Union Special SIXTY-ONE-FOUR.

Prove it in your own plant! This is the machine that is superior for light or heavy weight work — for short runs as well as long... for tacking and back stitching... curved seams and straight runs. *Make this test now.* See your local Union Special representative, or write UNION SPECIAL MACHINE COMPANY, 407 N. Franklin St., Chicago 10, Illinois.



THE NEW 61400 UNION SPECIAL LOCKSTITCH

FASTEST ACCELERATION! The SIXTY-ONE-FOUR is without equal in acceleration from zero to maximum rated speed.

EFFORTLESS SPEED! New light weight parts make for higher speed—smooth, effortless operation.

SUPERIOR FEEDING! Freedom from marking or cutting on finest materials. Precise stitch length control at all speeds. Smooth, flat seams—even on curves.

ADVANCED PERFORMANCE! Superior for tacking, back stitching, staying. Highly refined oil control guards against spotting. Better thread handling; minimum breakage.

RIGHT FOR THE JOB! Wide choice of sewing combinations to meet every requirement. *For complete information, ask for new Bulletin 258.*

IT'S THE SIXTY-ONE-FOUR IN '54!

Shorts and Remnants

ceived evidence that you are skilled in still another field—that of photography . . . thank you for sending me a print. . . "

NORMAN E. ELSAS
Chairman of the Board
Fulton Bag & Cotton Mills
Atlanta, Georgia

► Ed. Note: The photographic skill belonged to associate editor Frank Guest.

Pacolet Story

" . . . we are very much interested in the article on the Pacolet Manufacturing Company's system for handling cold slurry which appeared in the March issue of TI, and wonder if we could obtain permission to use it in part or as a whole in our company magazine, the 'Staley Journal' . . . "

HAL J. ROCHE
Manager
Staley Information Service
A. E. Staley Mfg. Co.
Decatur, Ill.

► Permission granted.

Disagrees on Oiling Dope-Dyed

" . . . the story 'Here's the Dope on Dope-Dyed' which appeared in the March issue . . . one of the statements is 'Don't process dope-dyed staple without applying either oil or an antistatic finish.' We are, of course, not clear as to what is the source of this statement, but we would like you to know that our technologists emphatically disagree with it. . . "

ROYSTON DUNFORD
Courtaulds, Inc.
600 Fifth Ave.
New York 20, N. Y.

► We respect the opinion of Courtaulds' technologists. The dope-dyed story was a round-up and survey of methods in a number of mills. Sources of statement were several mill superintendents who are currently processing dope-dyed.

Visual Aids

" . . . would like to obtain a copy of the bibliography of visual aids for the textile industry which was published originally in 1947. . . "

S. A. HILLS
Training Supervisor
Bigelow-Sanford Carpet Co.
Thompsonville, Conn.

► Few reprints available.

Gaston County

NEW 'HY-VACUUM' NYLON 'HELANCA'

Developed primarily for steam setting the twist in Nylon "Helanca" yarns, this new controlled vacuum-pressure system has a definite place in other types of steam processing. Experimental projects now being conducted by leading woolen and worsted mills are showing such remarkable results, it may indicate the replacement of conventional steam box methods, on the basis of quality alone.

THE PROCESS—More Efficient, More Economical

* Start vacuum pump by means of push button. 22" to 25" vacuum is produced in 2 to 3 minutes. Pump stops automatically.
* Steam is injected at controlled temperature for any desired time period. Steam is expelled automatically.
* Automatic controls start pump and vacuum cycle is repeated to remove moisture from vessel.
* Pump stops and vacuum relief valve opens to restore atmospheric conditions inside vessel.

THE ADVANTAGES—Higher Quality, Bigger Profits

* Time saving. Complete process in 30 minutes or less, depending on steam injection cycle required.
* Positive shrinkage. Yarn is shrunk and twist is set *uniformly* from *outside to spool core.*

CUSTOM BUILT to customer specifications in accordance with ASME standards, Gaston County autoclaves can be designed with vessels to fit into existing systems using present pin racks and trucks.

RUGGED CONSTRUCTION, always an outstanding feature of Gaston County beam and package dyeing machines, is even more essential in vacuum vessels. Our engineering staff is eminently qualified by experience to design the best equipment for your requirements.

COMPLETELY AUTOMATIC OR MANUAL machines are available. Whether your requirements are large or small we are equipped to serve you. Please phone, write, or wire for complete details.

GASTON COUNTY

GASTON COUNTY DYEING MACHINE CO.

Pioneers in Automatically Controlled Dyeing Machines

STANLEY, NORTH CAROLINA

Gaston County Dyeing Machine Co.
Terminal Building, 68 Hudson St.,
Hoboken, N. J., G. Lindner, Mgr.

The Rudel Machinery Co., Ltd.,
614 St. James St., W. Montreal
137 Wellington St. W., Toronto

Why sure, I know what I'm doing . . . I guess.

I'm a toothpick inspector. Yep, I went to college six years and now I'm a specialist. Last week, someone asked me if I knew anything about air conditioning. "Why heck, yes," I said, "I've had six years of college, and I know the toothpick business from one end to the other . . . just let me at your spinning room and weave room." Did a Jim-Dandy job. Had lots of parts left over. Gave him my ideas on how he should run his mill, too. Funny this fellow never thanked me for helping him out. I saw him a few weeks later and he was mumbling to himself about how badly things were going on Worth Street. Didn't even look at me. Ain't that gratitude for you!

*Before you let someone like this tinker with your air conditioning, see the people who are specialists in this line. If you don't you'll be sor-ree!

WHITE

Leaders in textile air conditioning for more than a quarter century ● engineering, drafting and service departments serving the greatest names in the industry ● 1442 South Tryon, Charlotte, North Carolina

Shorts and Remnants

Keeps Old Copies

" . . . in reviewing some of my old copies of TEXTILE INDUSTRIES, I have come across an article 'Spun Yarn Effect with Filament' in the February issue . . . would it be possible for you to get someone to fill in the following questions (on Textralizing): . . . "

GEORGE W. MURPHY, JR.
Sudamtex de Uruguay
Colonia
South America

Further Copy

" . . . we refer you to our letter and shall be obliged if you will send us a further copy of the article on cleaning steel rollers on spinning frames which appeared in the July 1953 issue. . . "

ASST. MANAGER
Buckingham & Carnatic Co., Ltd.
Madras, Spain

Translate from TI

" . . . should like to have your agreement for the reproduction in French of 'Nep Count Reduced by Opening and Picking Changes' by T. S. Harris for August 1951 issue. . . "

Foreign Publication

► Okeh by us.

Interference in August

" . . . in the August issue you printed an article on 'Machine Interference' . . . would very much like to obtain this article. . . "

W. R. BEURET
Assistant to President
Newberry Mills, Inc.
New York, N. Y.

On Dyeing

" . . . please send us copy of TI . . . interested in article on 'Dye Package Permeability Tester' by E. L. Worth. . . "

PETER VAN S. RICE
A. H. Rice Co.
Pittsfield, Mass.

10 of Each

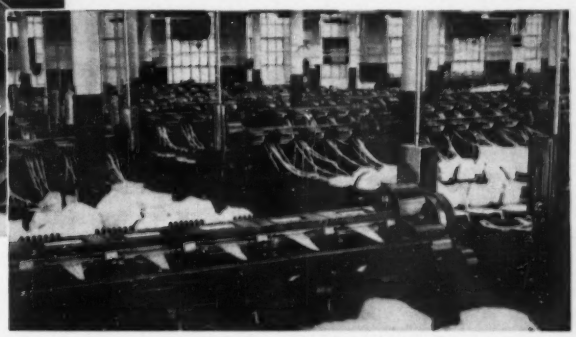
" . . . please send me and bill me for 10 each reprints on 'Here's the Dope on Dope-Dyed' and 'Smooth Surface—Easy Clean' . . . "

PAUL G. WOODWARD
Plant Manager
American Viscose Corp.
Parkersburg, West Va.

CUTLER-HAMMER

MOTOR CONTROL FOR THE TEXTILE INDUSTRY

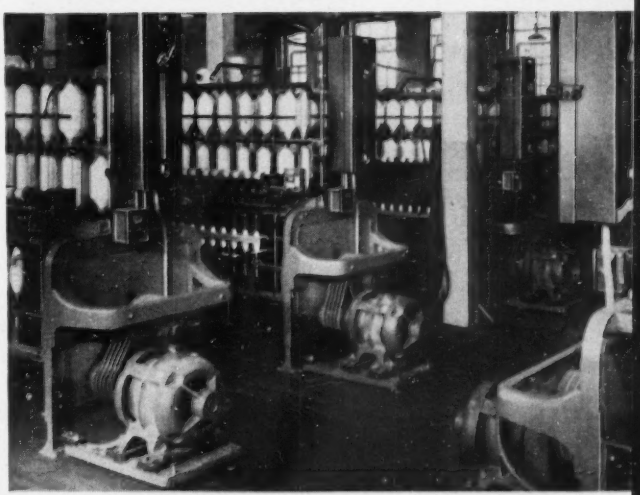
for **EXPOSITION** at Atlanta.
(At left) Cutler-Hammer Magnetic Starters and Safety Switches in the opener room and (below) Cutler-Hammer Combination Starters on drawing frames.



Specify it by name

Cutler-Hammer is the natural choice of experienced men who know dependability in motor control for textile manufacturing is too important to be left to chance. They know that Cutler-Hammer dependability is not a mere competitive claim but a fact that can stand out clearly in a mill's operating records to reflect favorably on their own ability and good judgment. They also know Cutler-Hammer dependability is not an occasional happenstance... that it is the earned advantage of the longest and most intensive specialization in motor control engineering... that it can safeguard every control need over the entire range of textile manufacturing requirements from the simplest starter to the most complex of electronic equipment.

You too will find it pays to insist on Cutler-Hammer Motor Control and refuse all substitutes. An adequate network of Authorized Cutler-Hammer Distributors throughout the textile manufacturing areas insures prompt attention and supply. **CUTLER-HAMMER, Inc.,** 1456 St. Paul Avenue, Milwaukee 1, Wisconsin.

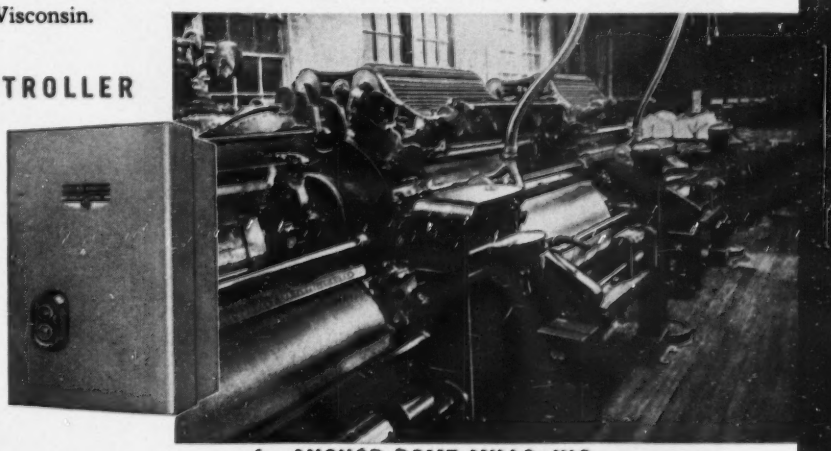


for STATESVILLE
Cutler-Hammer Combination Starters and Shipper Rod Switches on spinning frames. STATESVILLE DIVISION, The Seminole Mills, Statesville, N. C.

CUTLER-HAMMER CARD CONTROLLER

With integral drum type reverse switch

Here in one self-contained unit is all the control needed for a card...convenient pushbutton starting and stopping *plus* an integral reverse switch for cleaning and grinding. Card cannot be reversed accidentally or by any unauthorized person when controller case is padlocked. Easier to install. Easier and safer to use. Felt-gasketed against lint. Famous Cutler-Hammer Eutectic Element Overload Protection specially arranged to provide long starting time (required for cards) without loss of normal operating protection.



for ANCHOR ROME MILLS, INC., at Rome, Ga.
Cutler-Hammer Card Controllers in a neat installation for individual card drives.

CUTLER-HAMMER
MOTOR CONTROL
C-H

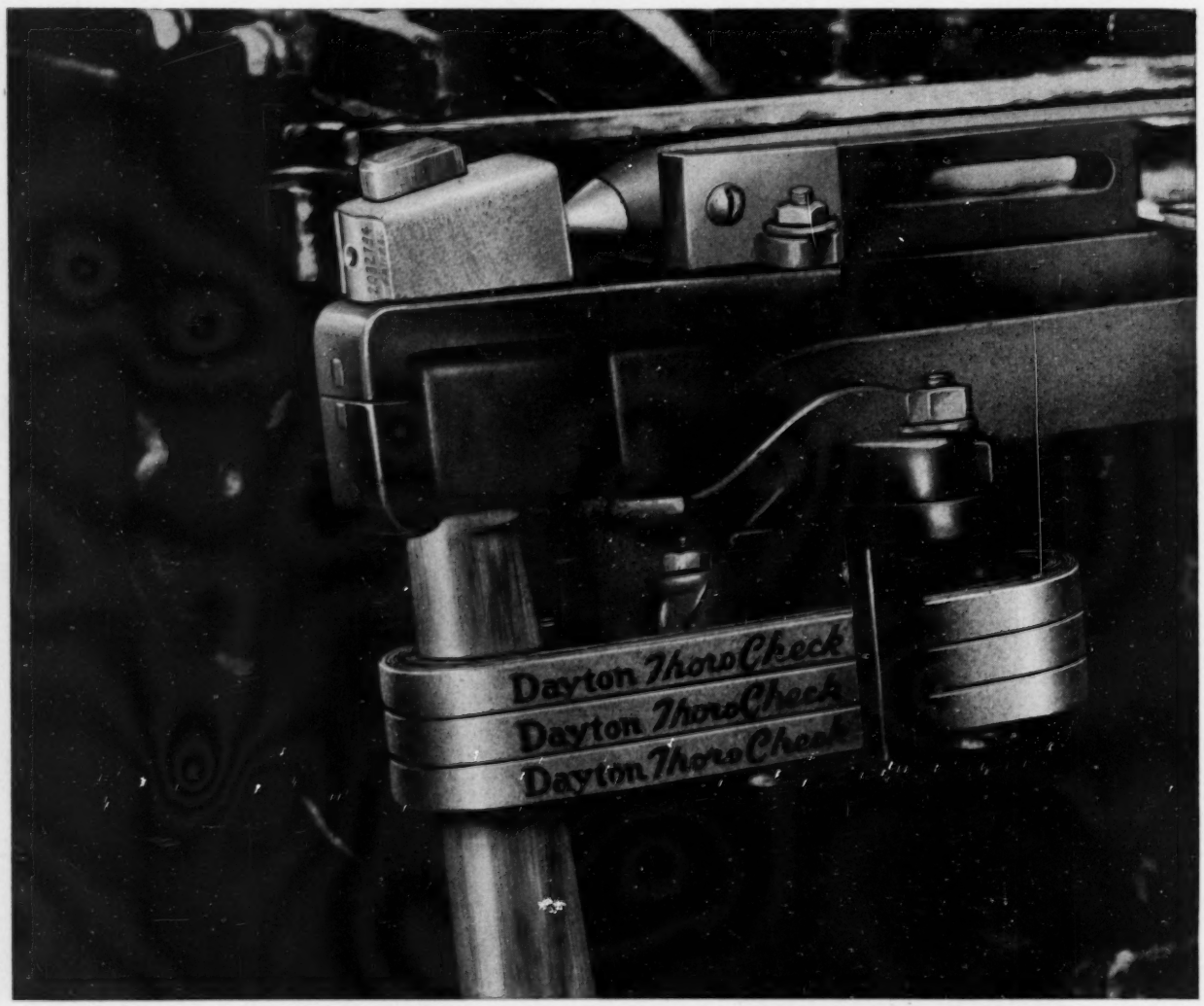
Mills Save 25%

DAYTON ThoroCheck

Actual use proves economy of Dayton ThoroChecks. Reduce picking motion costs by equipping your frames with Dayton ThoroChecks that have proved themselves in actual operation. Mill superintendents report a 25% to 50% reduction in check strap cost as well as healthy savings in time, labor and maintenance with these amazing, longer-lasting synthetic ThoroChecks.

One mill reports installing Dayton ThoroChecks on 40 looms running 182 picks per minute. No adjustment has been necessary and inspection after 14 months of continuous service shows no signs of wear. No telling *how much* the saving will eventually be when new Dayton ThoroChecks are finally installed.

You can get these worthwhile benefits for *your* weaving



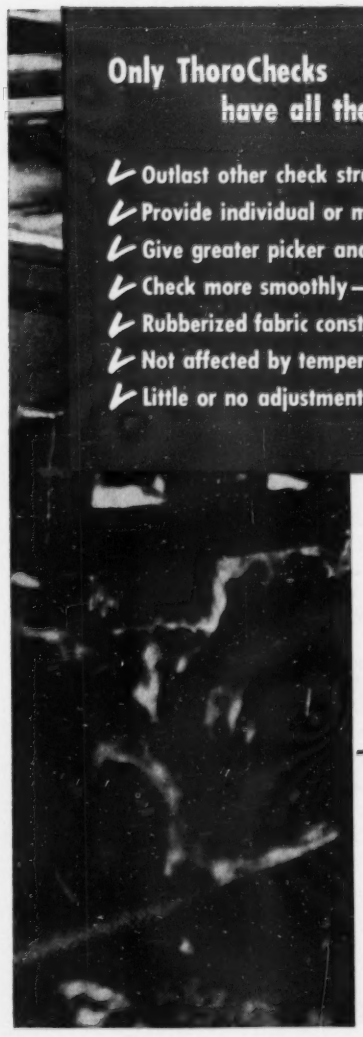
to 50% with...

Endless Check Straps

room operation, just as other mills are doing, by changing to Dayton ThoroCheck Endless Check Straps throughout.

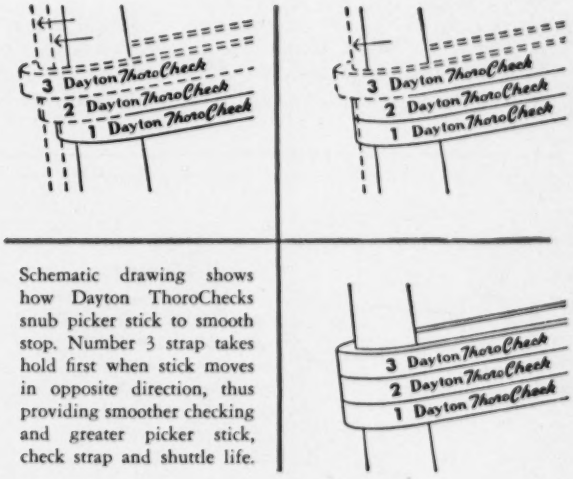
There's an important safety factor, too, in Dayton ThoroChecks. For, when breakage finally does take place after lengthy service, usually only one check strap of the set will be affected . . . the remaining two will protect your equipment until the needed replacement has been accomplished.

Smoother checking by means of a snubbing action protects the stick and, in addition, because impact of the picker stick is displaced over *all three* straps, you get longer strap life under the severest pounding. No doubt about it, you'll improve your checking operation and reduce your cost with Dayton ThoroChecks. Try a test today. Just fill out and mail the coupon for complete details without delay.



Only ThoroChecks have all these advantages:

- Outlast other check straps 25% to 50%
- Provide individual or multiple replacement
- Give greater picker and shuttle life
- Check more smoothly—protect picker stick
- Rubberized fabric construction—no elongation
- Not affected by temperature or humidity
- Little or no adjustment needed



Schematic drawing shows how Dayton ThoroChecks snub picker stick to smooth stop. Number 3 strap takes hold first when stick moves in opposite direction, thus providing smoother checking and greater picker stick, check strap and shuttle life.

Dayton Rubber

Since 1905

Textile Products for Better Spinning & Weaving © D.R. 1954

Dayton Rubber Co., Textile Division **Woodside Bldg., Greenville, S. C.**

Dayton Rubber Co., Textile Division, Dept. 366, Woodside Bldg., Greenville, S. C.
Send me complete information on Dayton ThoroCheck Endless Check Straps

Name _____

Name of Mill _____

Address _____

City _____ *Zone* _____ *State* _____

Personal NOTES
ABOUT MEN YOU KNOW

Frank Yerick has become overseer of weaving at the Bernhard Altmann Co. mill at Philmont, N. Y. He formerly was with Atlantic Mills, Stottville, N. Y.

George Bolton, previously with the American Woolen Co.'s Kennebec Mills, is now boss carder at American Felt Co.'s plant at Franklin, Mass.

Harold Wilson has been made manager of the Raleigh, N. C., mills of American Woolen Co.

A. L. Fort, head of Avondale Mills' cotton department, has retired from active duty and moved his residence to Selma, Ala. **W. H. Carter** has retired as foreman of the Eva Jane card room.

D. H. Tyson, formerly assistant treasurer and comptroller, is now treasurer of Botany Mills.

The Newcomen Society in North America, at its 1954 Georgia meeting recently, honored Callaway Mills Co. and its president, **Arthur B. Edge, Jr.**

Previously with E. I. du Pont de Nemours & Co., Inc., Klopman Mills, Inc., and Allied Chemical and Dye Corp., **Donald M. Goerg** is now fabric technician and designer in the fabric development department of Celanese Corp. of America.

Ernest Eckert has been made resident manager of Plant J, Collins & Aikman's fine woolen and worsted mill in Bristol, R. I. He was previously at the Puritan Mill of American Woolen Co.

George M. Chappell has left Wyandotte Worsted Co. to become assistant vice-president in charge of manufacturing of Chatham Manufacturing Co., Elkin, N. C.

George H. Turner, formerly card room overseer at Trenton Mills, Gastonia, N. C., has joined the Clover (S. C.) Spinning Mills Co. as general overseer carding.

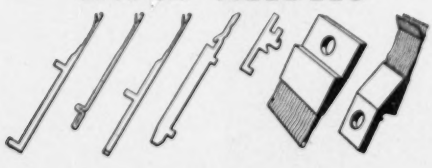
Robert O. Arnold, president of Covington (Ga.) Mills, was recently named to the South's Hall of Fame for the Living. The award is presented annually for distinguished service.

Henry B. Miller, with the firm since 1929, has retired as manager of the Lynchburg division of Consolidated Textile Co. He is serving now as mill consultant.

R. O. Simmons, Pepperell Manufacturing Co., Lindale, Ga., has succeeded **Robert Train,** Bibb Manufacturing Co., as chairman of the Cotton Buyers' division of the Cotton Manu-

From tot-wear to ties — for sweaters, fancy socks, or fine glove fabrics — Arrow Latch Needles, parts and leaded assemblies are available. We have them for nearly every type of circular, flat-bed and Raschel machine. Prompt deliveries are made from stocks in Reading, Pa., Asheboro, N. C. and Manchester, N. H.

Arrow
LATCH NEEDLES



Wire Products Division
TEXTILE MACHINE WORKS, READING, PENNA.

facturers Association of Georgia. **Floyd Hallman,** Dixie Mercerizing Co., was elected vice-chairman, and **Frank Carter,** Cotton Manufacturers Association of Georgia, was re-elected secretary of the cotton buyers group.

L. Gordon Hale has retired as secretary of Duplan Corp. after 36 years with the firm. He is succeeded by **John E. Clark,** assistant secretary.

J. S. Moynan has been made manager of the Magog division of Dominion Textile Co., Ltd., Montreal. He succeeds Harold A. Leduc, who returned to the United States. Succeeding Mr. Moynan as print works superintendent is **W. A. Tornquist.**

Leon E. Moody, a director of Duplan of Canada, Ltd., has been named vice-president and director of Duplan Dyeing Co., Ltd., Valleyfield, Quebec, a wholly owned subsidiary of Duplan of Canada.

George H. Coates, with the sales division, has retired after 45 years of service with Fulton Bag & Cotton Mills, Atlanta, Ga.

New officers elected at the spring meeting of the Carolinas Section of the American Society for Quality Control were: (left to right in picture) **Howard Loveless,** Clemson College, secretary; **G. Dent Mangum,** research department, N. C. State College, vice-chairman; and **John P. Elting,** Kendall Mills, Paw Creek, N. C., chairman. **Frank Hunsucker** of Highland Cotton Mill, High Point, N. C., was named treasurer. Problems encountered by mills under the Flammable Fabrics Act were discussed at the meeting, as were effects of pre-twisting roving, influence of anti-static oils, and effects of drafting and doubling.

Professor John H. Skinkle has been appointed executive director of the research foundation of Lowell Technological Institute. He has been a member of the board of directors since 1950.

New manager of research and development for Munsingwear, Inc., Minneapolis, Minn., is **Carroll R. Anderson.** He joined the firm in 1933 as superintendent of the knitting and finishing departments.

W. E. Dunn has been appointed general superintendent of Huntsville (Ala.) Manufacturing Co. For the past six years he has been superintendent of Monarch Mills, Union, S. C. At Huntsville Mr. Dunn will be assisted by **B. G. Stumberg, Jr.,** as plant superintendent.

Professor Arthur C. Hayes of the School of Textiles, North Carolina State College, wrote the entire section on silk for Volume 12 of the Encyclopedia of Chemical Technology, soon

True alignment of needles, consistently even stitches, less "idle machine time" — and the resultant lower cost and extra amount of production — are a "product" of Textile's quality control. And it's because of Textile's precise, automatic and electronic control of manufacture that America's leading manufacturers of full-fashioned stockings and warp-knitted fabrics insist on Spring-Beard Needles, parts and leaded assemblies — by TEXTILE.

Textile
SPRING-BEARD NEEDLES

Wire Products Division
TEXTILE MACHINE WORKS, READING, PENNA.

"foot-friendly" NORTHERN HARD MAPLE in Riegel Textile's New Trion warp spinning mill

Equipped throughout with modern machinery of the latest model, this unit of Riegel Textile Corporation at Trion, Ga., occupies space formerly devoted to glove manufacture. Glistening-clean floors of "foot-friendly" Northern Hard Maple provide comfort for the workers as well as the basis for the "good housekeeping" that will always be the mark of a well-managed mill. No other floor has yet been found to match the way maple fights abrasion, offers no lodgement for dirt or lint, resists oil and grease, and responds so beautifully to simple brush-and-broom cleaning. And, by the way, today's TOP BUYS in flooring are **MFMA** Second, or Second-and-Better grades. They're money-savers, and are warranted absolutely sound and precise in dimension. See Sweet's (Arch. 12k-MA) or write for newest flooring facts.

the finest floor that grows

MAPLE FLOORING MANUFACTURERS ASSOCIATION
Suite 591, Pure Oil Building, 35 E. Wacker Drive, Chicago 1, Illinois

FLOOR WITH NORTHERN HARD MAPLE BEECH AND BIRCH

Personal NOTES ABOUT MEN YOU KNOW

to be published by Interscience Encyclopedia, Inc.

The Linen Thread Co., Inc., Paterson, N. J., has announced the appointment of **Nicholas R. Dolida** as

Mr. Dolida

manager of the mechanical development department. He is headquartered at the Barbour Mill in Paterson, where the shops and research laboratories of the firm are located.

Howell K. Hallett and **William O. Forssell** were recently elected vice-presidents of The Kendall Co., Boston, Mass. Mr. Forssell was also named a director, and **Maurice L. Clemence** was elected treasurer.

New trustees of the Philadelphia Textile Institute are **Harry L. Dalton,** vice-president in charge of sales and public relations of American Viscose Corp., and **Frederick H. Schloss,** secretary and treasurer of Darlington Fabrics Corp.

J. A. White has taken over the duties of general manager at Republic Cotton Mills, Great Falls, S. C. He is vice-president of J. P. Stevens & Co., Inc.

R. P. Hardeman of Riegel Textile Corp., Trion, Ga., was recently elected president of the Summerville-Trion Rotary Club.

Leon H. Roberts, formerly with Ho-Ho-Kus Bleachery, Inc., Hohokus, N. J., has joined Rockland Bleach & Dye Works Co., Inc., Baltimore, Md., as vice-president and general manager.

Phi Psi Fraternity of North Carolina State College recently named as "North Carolina Textile Man of the

these Helanca socks are "set for life" by TURBO Penetration

Turbo "penetration" is an exclusive feature of the Turbo line of special-purpose machines for heat-setting and steam-setting synthetic yarns, fabrics and garments. It's done by alternating cycles of pressure and/or vacuum. Timing is accurately and automatically controlled. Temperatures are accurately and automatically controlled. Forms and containers, as required, move in and out of the setting cabinet on a collapsible conveyor. With mill-tested and production-proved Turbo Machines there is no guess-work. Production is uniform and thorough.

Your setting problems can be solved by Turbo equipment now available, or designed to your particular requirements. Ask the Turbo Representative — there's absolutely no obligation. Clip and send the coupon for prompt attention.

TURBO MACHINE COMPANY

LANSDALE, PA., U.S.A.

Southern Representative: F. W. Warrington Co., Charlotte, N. C.

"Builders of Precision Machines for a Quarter Century"

Turbo Cabinet is adaptable for wet or dry heat, under pressure or vacuum. Automatic timing and controls take guess-work out of operation.

TURBO
SINCE 1929

Send literature or information on Turbo Machine for:

- ☐ Preboarding/Boarding Nylon Stockings
- ☐ Sweater Setting
- ☐ Fabric Setting
- ☐ Crimp Setting
- ☐ Yarn Processing

Have Turbo Representative call to discuss special-purpose machine for following application:

.....

NAME .....

COMPANY .....

ADDRESS .....

Mount Hope SYSTEM

To compete today you're under pressure to TRAP LOST PROFITS in your PRINT WORKS

Read how this company profits!

MOUNT HOPE MACHINERY COMPANY

Personal NOTES ABOUT MEN YOU KNOW

Year" **G. A. Berkstresser,** manager and vice-president of Rosemary Manufacturing Co., Roanoke Rapids, N. C. The fraternity annually gives this honor to the man in North Carolina who has contributed most to the textile industry of the state.

A. M. Moore, Jr., was recently elected chairman of the Eastern Carolina Division of the Southern Textile Association. He is superintendent of Plant 6, Erwin Mills, Inc., Durham, N. C. Other new officers are: **J. K. Bruton,** Erwin Mills, Inc., Erwin, vice-chairman; and **D. H. Fuller,** Roanoke Mills Co., Roanoke Rapids. **J. C. Farmer,** superintendent of Henderson Cotton Mills, was named to the executive committee.

Mrs. Thomas D. Russell, wife of the president of Russell Manufacturing Company, Alexander City, Ala., has been given the Huntingdon College Alumnae Achievement Award for outstanding work in the fields of homemaking and civic activities. Throughout the cotton textile industry, Mrs. Russell is credited for her

Mrs. Russell

interest in promoting the annual Alabama Maid of Cotton contest and as the guiding hand behind the Russell Choralteens, a group of teen-age children of employees of the Russell textile plants, who are given special training in song and dance, and who are featured in the company's annual Christmas Ball and annual barbecue. Mrs. Russell regularly attends textile conventions devoted to the spinning, weaving, finishing, and knitting branches of the industry.

James W. Holland has retired, for a second time, as lab technician of Textiles-Incorporated, Gastonia, N. C. He came out of retirement in the early days of the war to "help out" when the younger men were away, and has been "helping out" ever since.

Louis M. Boulware was recently named assistant production manager of the textile division of United States Rubber Co. He is making his headquarters at Winnsboro, S. C., and supervises the firm's various textile plants. Transferred from the Fisk Cord Mills at New Bedford, Mass., now closed, **Thomas H. Fearrington** is with the Standards department of the Stark, Reid, and Asbeston plants in Georgia.

Dr. John Menkart has been appointed director of the work of the Wool Research Project for Textile Research Institute.

Donald B. Derby has resigned as president and director of U. S. Finishing Co. The firm recently merged with Aspinook Corp.

Vincent Hockmeyer, president of Vertipile, Inc., Lowell, Mass., has been re-elected a member of the Lowell city council.

William J. Whitehead, formerly managing director, has been named president of Wabasso Cotton Co., Ltd., Montreal, Quebec.

B. Joseph Kmon was recently elected vice-president of Ware Knitters, Inc., Ware, Mass. All other officers were re-elected.

Arthur Menks of Deering, Milliken & Co., Inc., was recently elected chairman of the Warp Knit Fabric Manufacturers Group of the National Federation of Textiles. Serving as vice-chairman is **Kurt J. Winter** of United Merchants & Manufacturers.

New president of Worth Street Inc., is **Willfred W. Lufkin, Jr.,** president of Wellington Sears Co., Inc. He succeeds John M. Reeves of Reeves Brothers, Inc.

Obituaries

Adelbert E. Agthe, 79, founder and president of Angora Knitting Mills.

Julius Bernhard, 70, retired vice-president of Princeton Worsted Mills.

John A. Blenkenbiller, 78, retired superintendent of Oakbrook Hosiery Mills, Inc.

William H. Brown, 44, president of Hiawatha Knitting Mills.

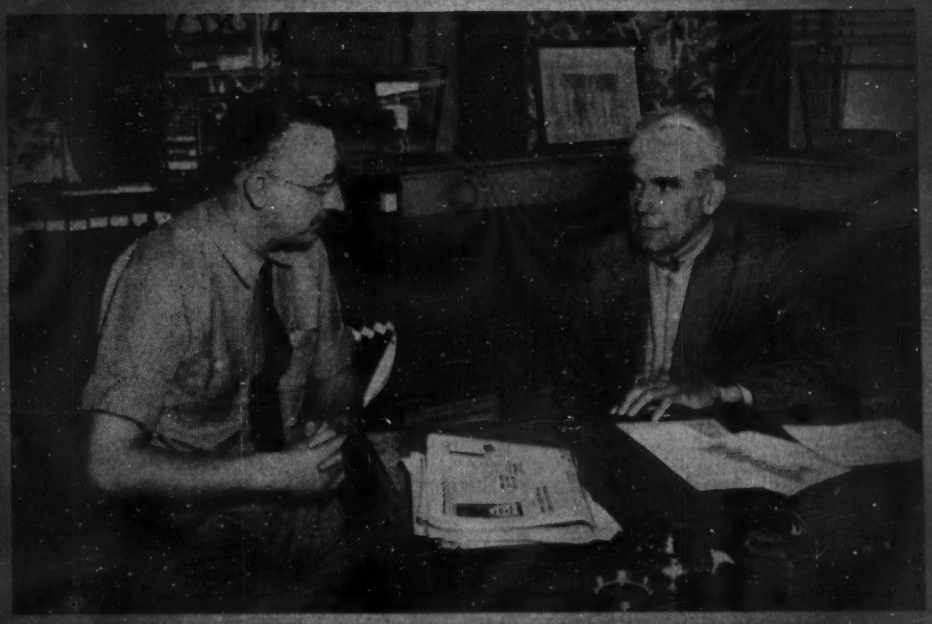
Robert Burns, 47, director of technical and customer services for all Latin American affiliates of Celanese Corp. of America.

W. Clift Campbell, 56, at one time president of Campbell Hosiery Mills.

F. William Clarenbach, until 1944

Mount Hope SYSTEM

"Paramount Printing and Finishing Company increased production 2500 YARDS per machine per shift — reduced seconds, eliminated bumping rolls to align cloth!" says Plant Engineer E. Wesley Adams.



"Installation of this equipment is a must!" Albert R. Davidson, Vice President of Paramount, at right, discusses Mount Hope System with Plant Engineer Adams.

"It was my belief years ago that the installation of a continuous spray was a modern streamlining necessity in any operation in a plant where time was lost and extra labor employed in stopping to spot on," Mr. Davidson states. "The Mount Hope product has fulfilled to the highest degree this function. Increased production, ease of operation, better labor relations and a standard of work load... have been greatly reflected in a reduced cost of operation. The installation of this equipment is a must in our Dye Room, Print Room, Dye House, Washers, Frames and Calenders, and our entire plant production reflects its time and labor saving efficiency."

Get the facts now! Start savings in your plant promptly — to strengthen your competitive position. Call your Mount Hope Representative — or have a Mount Hope Engineer survey your plant without obligation, to reveal your profit potential.

MOUNT HOPE MACHINERY COMPANY

15 FIFTH STREET, TAUNTON, MASS.

maximum
efficiency
and greatest
economy

RAPIDASE®
for removal of starch sizes

SERIZYME®
for removal of protein sizes

for de-sizing

ask for our latest bulletin on
continuous de-sizing

WALLERSTEIN COMPANY, INC. 180 MADISON AVENUE, NEW YORK 16, N. Y.

"PNEUMAFIL*-SPUN"

Yarn

. . . is easier to sell

"PNEUMAFIL*-SPUN" yarn is better quality yarn. "Wild or flying" ends and resultant doublings are eliminated. The "vacuum cleaning" effect provided at each roll boss collects practically all free fibers and fly released in this area. Consequently, there are fewer slubs and gouts, and those caused from cleaning conventional scavenger rolls are eliminated. When Pneumafil* waste is re-run, it is not necessary to use a waste machine which results in more even yarn with greater strengths.

Weavers and knitters *know* "Pneumafil*-Spun" yarn weaves and knits better, resulting in higher quality fabrics . . . that is why . . .

"PNEUMAFIL*-SPUN" yarn is easier to sell . . .

PNEUMAFIL CORPORATION

CHARLOTTE 8, NORTH CAROLINA

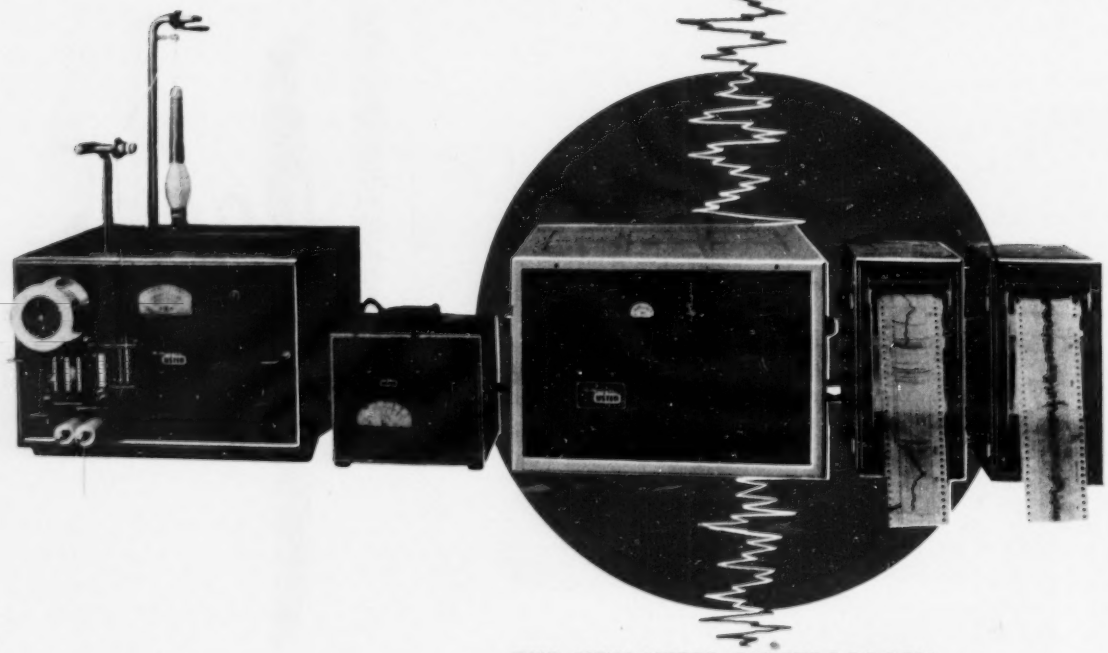
Sales Offices: Needham Heights, Massachusetts—Atlanta

*Reg. U.S. Pat. Off.

Copyright 1954, Pneumafil Corporation

THE SPECTROGRAPH

Another USTER First



THE NEW USTER SPECTROGRAPH . . .

(for direct use with the Uster Evenness Tester). Accurately indicates process causing unevenness from yarn tests alone! . . . Takes the guesswork out of chart evaluation! . . . Multiplies the value of evenness testing many times over! . . . A practical tool that almost thinks! . . . THE SPECTROGRAPH . . . ANOTHER USTER FIRST.

Controlling every operation in the mill from picker lap to finished yarn is . . . simpler . . . easier . . . and quicker . . . with the Uster Universal Evenness Tester and its companion instruments . . .

- Linear Integrator
- Quadratic Integrator
- Sliver Lap Adapter
- Lap Varimeter
- Varisignal
- ★ And Now "The Spectrograph"! . . .

. . . Another reason to buy Uster

USTER CORPORATION

CHARLOTTE 8, NORTH CAROLINA

Sales Offices: Needham Hts., Mass.—Decatur, Georgia

In Canada: Hugh Williams & Co., 47 Colborne St., Toronto, Ontario

GAIR can help

PROTECT YOUR PRODUCT

with engineered PACKAGING

Have you ever counted the hazards your product faces during transportation and warehousing? The rough handling and battering, plus pressure from stacking, are conditions that demand positive protection.

To solve the problem, Gair engineers design shipping boxes to give *two-way protection:*

1. Protection from external damage and shock – by the correct choice of box style;

2. Protection from internal shifting and breakage – by scientifically-designed inner packing.

In addition, Gair makes sure that the box is simple to pack.

Take advantage of this engineering service . . . without charge. Check with the Gair factory nearest you to learn how. Learn, too, how Gair's assured material supply and delivery service can help give you the best in corrugated shipping boxes.

Ask for our booklet on the sealing of boxes.

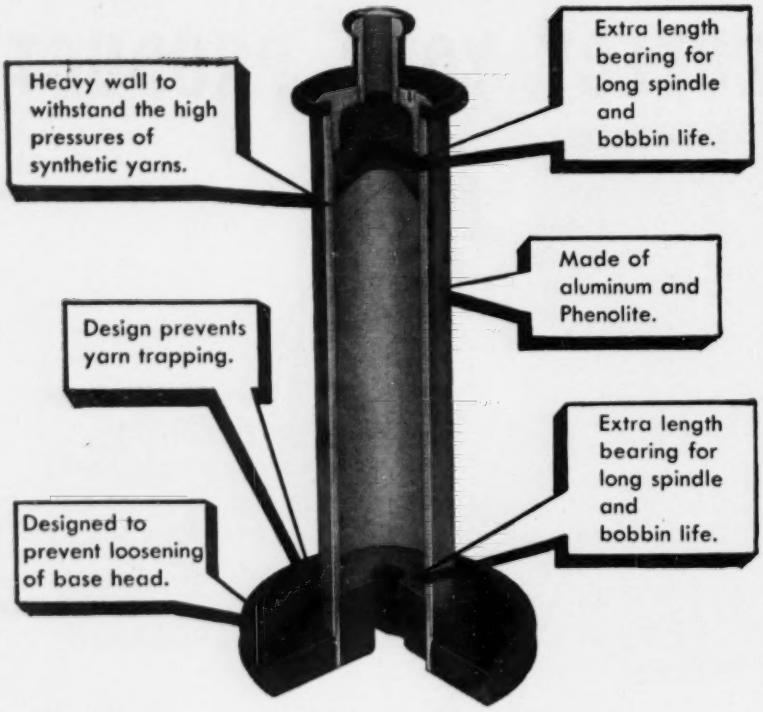
CAMBRIDGE, MASS. • CLEVELAND, OHIO • HOLYOKE, MASS. • LOS ANGELES, CAL. • MARTINSVILLE, VA.
NO. TONAWANDA, N. Y. • PHILADELPHIA, PA. • PORTLAND, CONN. • RICHMOND, VA. • SYRACUSE, N. Y. • TETERBORO, N. J.

GAIR

SHIPPING CONTAINERS
FOLDING CARTONS
PAPERBOARD

ROBERT GAIR COMPANY, INC. • 155 EAST 44th STREET • NEW YORK 17

NEW NATIONAL HIGH SPEED 10B Ring Twister Bobbin


Heavy wall to withstand the high pressures of synthetic yarns.
Extra length bearing for long spindle and bobbin life.
Made of aluminum and Phenolite.
Design prevents yarn trapping.
Extra length bearing for long spindle and bobbin life.
Designed to prevent loosening of base head.

Gives you the Most Bobbin for your Dollar

OTHER FEATURES

This new National 10B Ring Twister Bobbin (also made for 5B's) is the result of a year's research work.

It is unaffected by the high pressures of synthetic yarns. Its concentricity and construction eliminate the need for balancing. Since the bobbin runs more smoothly, both spindles and bobbins last longer.

The new bobbin may be knocked down and the heads replaced, should this become necessary.

The aluminum barrel can be furnished case hardened to prevent scoring.

Write us today for descriptive folder and prices.

NATIONAL VULCANIZED FIBRE CO.

Lestershire Spool Division

140 Baldwin Street — **Johnson City, N. Y.**

BRANCH OFFICES AND TECHNICAL SERVICES:
National Vulcanized Fibre Co.

New Haven, Conn. · Chicago, Ill. · Baltimore, Md. · Detroit, Mich. · St. Louis, Mo. · Philadelphia, Pa. · Pittsburgh, Pa. · New York, N. Y. · Rochester, N. Y. · Cincinnati, Ohio · Cleveland, Ohio

Greenville Textile Supply Co. Greenville, S. C.

Odell Mill Supply Co. Greensboro, N. C.

National Fibre Co. of Canada, Ltd. Toronto, Ontario

Personal NOTES ABOUT MEN YOU KNOW

(Obituaries continued from page 30)

superintendent of the Stevens Mill of M. T. Stevens & Sons Co., North Andover, Mass.

A. B. Combs, cotton buyer for Dundee Mills.

Walter F. Fancourt, Jr., 71, president of W. F. Fancourt Co.

Ray Ferguson, until recently president of Globe Knitting Mills.

Myron S. Freeman, 67, former president and general manager of Bell Co.

Frank J. Hale, 91, senior director of the board of Saco-Lowell Shops.

George W. Hickey, 65, former production manager of the American Thread Co. plant at Willimantic, Conn.

Chester A. Jordan, 72, chairman of the board of the Limerick Yarn Mills.

C. W. Kuhl, 76, chairman of Carbic Color & Chemical Co.

Joseph H. Lindsay, 51, Karastan Rug Mill of Fieldcrest Mills.

Clarence R. Medley, 80, president of C. R. Medley Co., and formerly with Medley Manufacturing Co.

Albert E. Queitzsch, 66, former vice-president of Pohatcong Hosiery Mills.

J. S. Ragsdale, 51, head of wool purchasing at Fieldcrest Mills and vice-president of Oakdale Cotton Mills.

Dan M. Rugg, 64, vice-president of Koppers Co., Inc.

George C. Schlegel, 83, treasurer of Schlegel Manufacturing Co.

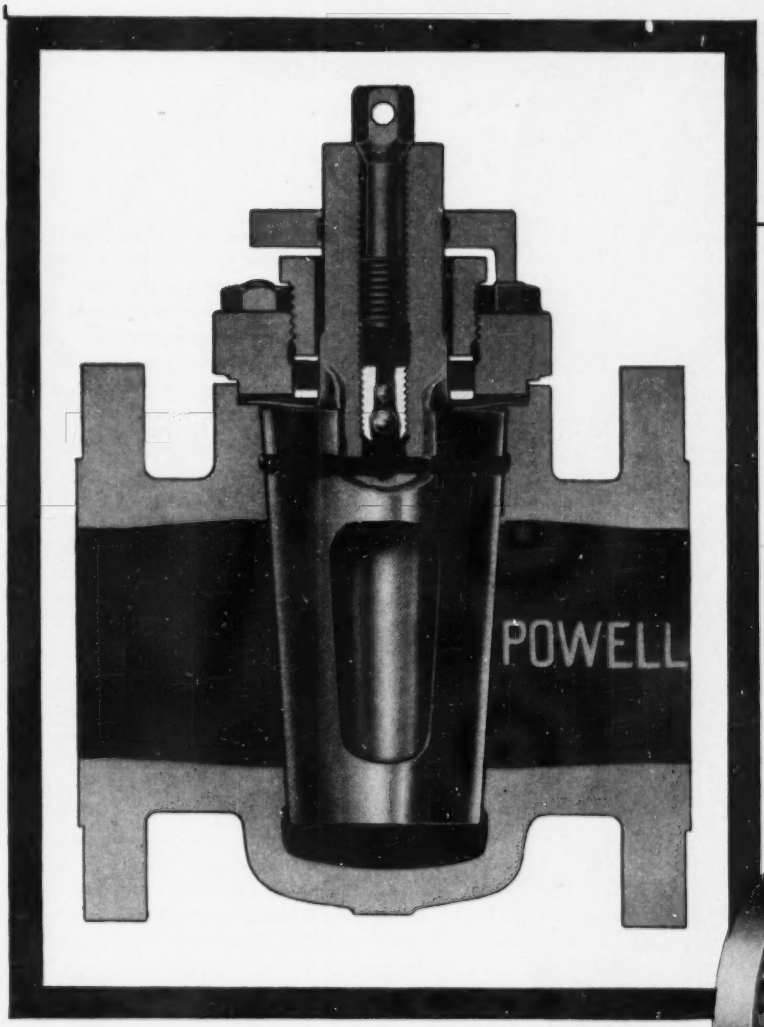
W. Ledoux Siewers, 69, former president of the Maline, Indera, and Carolina Textile Mills.

National Defense Linked to Tariff Policy

"I have no quarrel with the objectives of helping our allies in any way consistent with our own interests. It is a reasonable, a humanitarian, and a business-like purpose. But to deplete our own resources and weaken our own defenses is no answer, either to our allies or ourselves."—Henry B. du Pont, E. I. du Pont de Nemours and Co.

Powell LUBRICATED PLUG Valves

Now! A great new line of valves that maintain the Powell standards of precision!



Investigate these outstanding new Lubricated Plug Valves that carry the Powell name and measure up to the Powell standards of precision. Features include quick and positive operation – just a quarter-turn to open or close. Lubricant grooves surrounding each port provide a positive seal when the valve is closed. In an open position, seating surfaces are not exposed.

Available in Semi-Steel and Carbon Steel through distributors in principal cities. For descriptive literature–or help on valve problems–write direct to The Wm. Powell Company, Cincinnati 22, O.

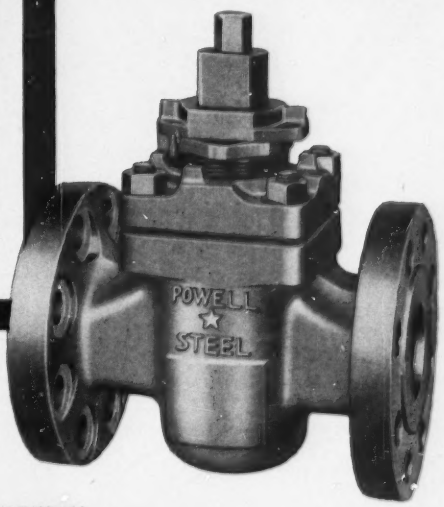
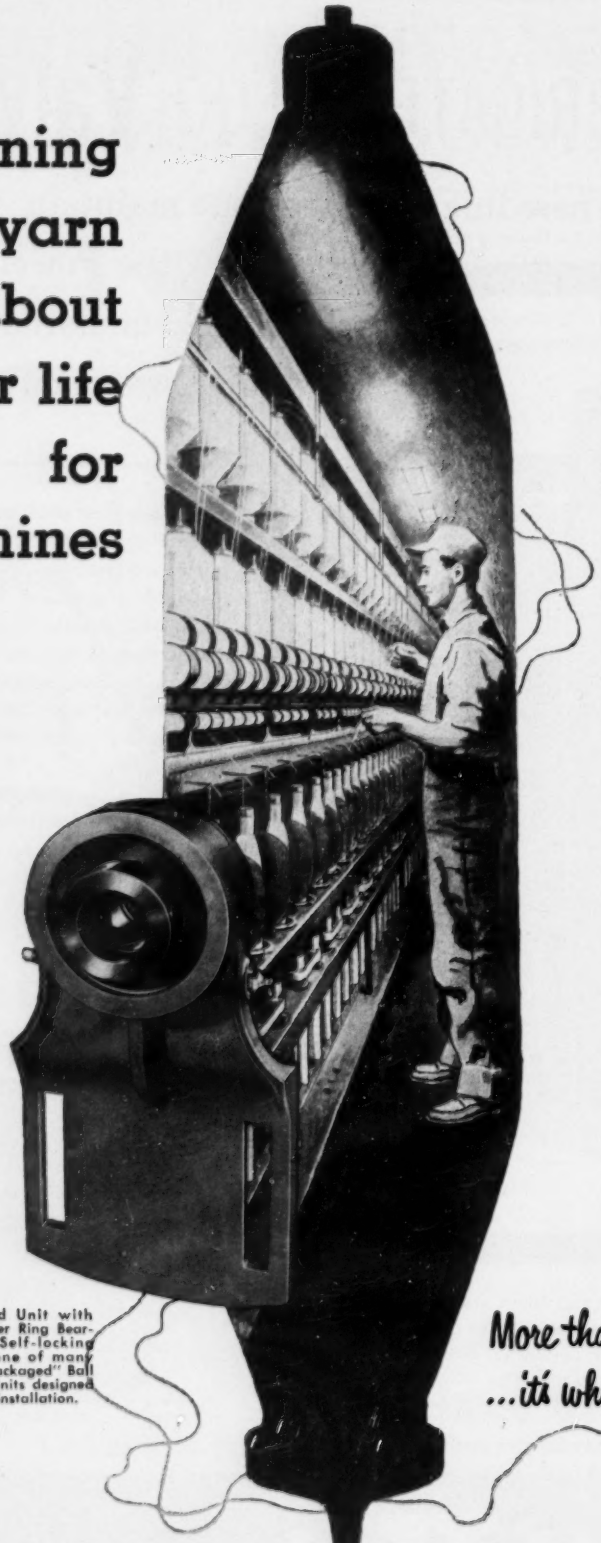


FIG. 1559 — 150-POUND STEEL FLANGED END LUBRICATED PLUG VALVE. *(300-pound Steel, Fig. 3059.)* Available with Screwed or Bolted Glands. Semi-Steel valves available for 175 and 200 pounds W.O.G. Carbon Steel valves available for 150 and 300 pounds W.P.

CONTROLS FOR THE LIFE LINES OF INDUSTRY

Powell Valves *108th year*

Spinning a yarn about longer life for machines



Head End Unit with Wide Inner Ring Bearing and Self-locking Collar, one of many Fafnir "Packaged" Ball Bearing Units designed for easy installation.

Once upon a time, anti-friction bearings were a rarity on spinning frames and other machines in the textile industry. And that was unfortunate because the advantages to mill operators were many and great. "Ball Bearing Equipped" meant a more productive machine, less down-time, and longer machine life.

Trouble was, the machines had to be redesigned . . . and that was costly. Then came Fafnir with "packaged" ball bearings—a new development. Complete units, including housings, seals and shields, they are simple and quick to install on all types of machines . . . both old and new . . . from bale breakers through finishing machines.

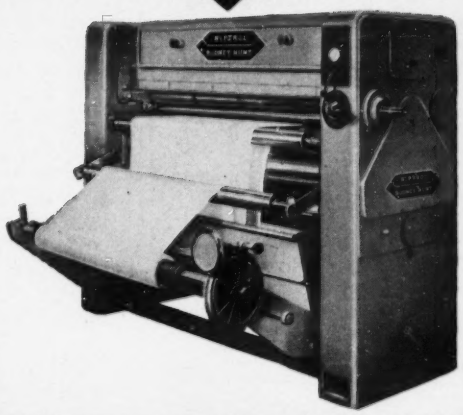
This is another example of the Fafnir "attitude and aptitude" for providing the right bearing for the need. It's a way of looking at bearing problems from the user's viewpoint that pre-supposes *top-quality* ball bearings. Perhaps this combination can help you get *your* bearings. For Fafnir's experience is not only 40 years long—it's industry *wide*. The Fafnir Bearing Company, New Britain, Conn.

More than top quality in ball bearings ...it's what Fafnir has on the ball

FAFNIR BALL BEARINGS

THE MOST COMPLETE LINE IN AMERICA

NEW!
The Niptrol
Pneumatic Mangle



The Niptrol* Pneumatic Mangle eliminates the consequences of roll deflection by distributing total pressure as needed through the length of the upper squeeze roll to compensate completely and uniformly for deflection of the roll at any pressure.

So effective is the pneumatic method of equalizing load that it is possible, at maximum pressure, to maintain a constant nip of 3/16ths of an inch throughout the full width of the roll. This novel pneumatic system in combination with the extraordinary surface characteristics of one of the rolls gives a degree of extraction equal to that of a conventional heavy-duty 20-ton water mangle without damage even to the most delicate fabrics!

When used for simultaneous extraction and starching, the Niptrol Mangle assures equal distribution of starch the full width of the roll.

Write for NEW Bulletin

Resins for crease-proofing, waterproofing, etc., are effectively applied by the Niptrol Pneumatic Mangle to many fabrics including cotton, wool, rayons and synthetics. High efficiency at both nips gets resins *into the fibers.* All excess resin is removed at the final nip and returned to the chemical bath. Hand, finish and quality of fabrics are exceptional!

A new four-color bulletin describes the outstanding process flexibility of the new Niptrol Pneumatic Mangle. Please write for your free copy.

*Niptrol is a trademark of Rodney Hunt Machine Co.
Patents Pending.

RODNEY HUNT®

Manufacturing Engineers Since 1840

RODNEY HUNT MACHINE CO.
65 MILL STREET, ORANGE, MASSACHUSETTS, U. S. A.

BENJAMIN

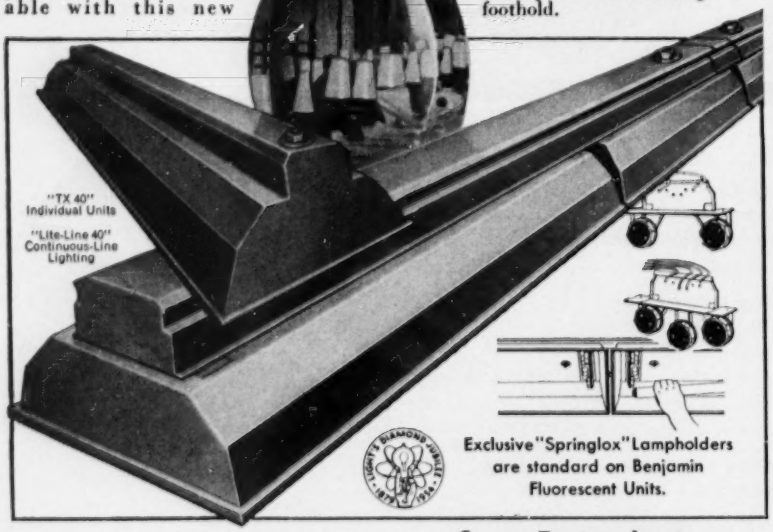
HUMIDITY-DEFYING

Textile Lighting Systems

Cut Maintenance and Replacement Costs

Porcelain-Enameled Channels with special provisions for moisture-proof line-wire entrance and conduit suspension, are now available with this new Benjamin "Lite-Line 40" Porcelain Enamel System. Especially designed to combat the excessively moist atmospheres found in textile mills, these units are completely protected against the danger of rust and deterioration due to moisture accumulation.

A virtually unbroken surface of durable Porcelain Enamel covers the channels. There is no place for rust to get a foothold.



Exclusive "Springlox" Lampholders are standard on Benjamin Fluorescent Units.

In locations where a lighting system of individual units is preferred, Benjamin "TX 40" Units meet all the requirements for long-life, trouble-free service in the highly-humid atmospheres found in the textile industry. This one-piece, All-Porcelain Enamel Unit completely protects against rust due to the accumulation of moisture. The one-piece steel construction, by virtue of which the channel becomes an integral part of the housing, makes possible a smooth, unbroken surface of "Life-Time" Porcelain Enamel. There are no cracks or crevices where moisture can collect. Special construction of tapped, cast metal suspension flanges, the same as those found in the "Lite-Line" System, prevents entrance of moisture around conduit stems.

Some Facts about "Springlox" Lampholders

Here are some of the tests which "Springlox" has passed in the Benjamin Development and Testing Laboratory:

(1) Humidity Chamber Test — 1000 hours in 95% humidity at a minimum temperature of 95° F.
(2) Spring and Contact Fatigue Test —8000 simulated lamp changes.
(3) Vibration Test—100 hours at 25 cycles per second.

Get Up-To-Date on Humidity-Defying TEXTILE LIGHTING! Send for LATEST, FREE DATA BULLETIN — Write Benjamin Electric Mfg. Co., Dept. TI, Des Plaines, Ill.

What the TEXTILE MILLS are doing

The **Alden Mills** plant at Meridian, Miss., is undergoing an expansion program which includes a 10,000 sq ft building to manufacture boxes, and 111 additional machines to manufacture cotton socks. The expansion will provide employment for about 70 persons and increase the payroll by $125,000 annually.

Space has been leased by **Balston Novelty Yarn Corp.** of New York from Raycrest Mills, Mineral Springs Avenue, Pawtucket, R. I., and the plant is now in production, making novelty yarns and doing commission throwing.

The **John T. Bennett Co.,** piece goods bleacher and dyer, was recently sold, though no change in personnel or method of operation is contemplated at this time.

Sidney Blumenthal & Co., Inc., has under construction a plant for the weaving of pile fabrics. It is located near Scotland Neck, N. C., and the first unit of 30,000 sq ft will be ready for operation about July 1. This new plant is part of an extensive expansion program of the company.

The Shawmut division of **Richard Borden Mills Corp.,** Fall River, Mass., has been closed permanently. A part of the machinery is being moved to the main plant, the remainder to be sold.

Carolina Mills, Inc., Dillon, S. C., closed since last fall, has been purchased by the newly formed **Coastal Mills, Inc.,** owned and controlled by Robert E. Stone, Jack Law, Merrill C. Patten, and Sam Snoddy. Mr. Snoddy is general manager of the new mill.

The new $5,000,000 dyeing and finishing plant of **Coates & Clark, Inc.,** at Toccoa, Ga., has been completed.

Controlling interest in **Priscilla Worsted Mills,** Thornton, R. I., has been bought by **R. P. Collins & Co., Inc.,** Boston topmaker. The plant will

(Continued on page 53)

CUPROFIX 52

CUPROFIX 52

CUPROFIX 52

Worth repeating

CUPROFIX . . .

Made possible an entirely new method for achieving fast colors on synthetic fabrics.

CUPROFIX "52" . . .

Enables the dyer to continue to deliver first grade quality at an even lower cost.

CUPROFIX AND SANDOFIX . . .

Are evidence of Sandoz' intention to remain the leaders in this field.

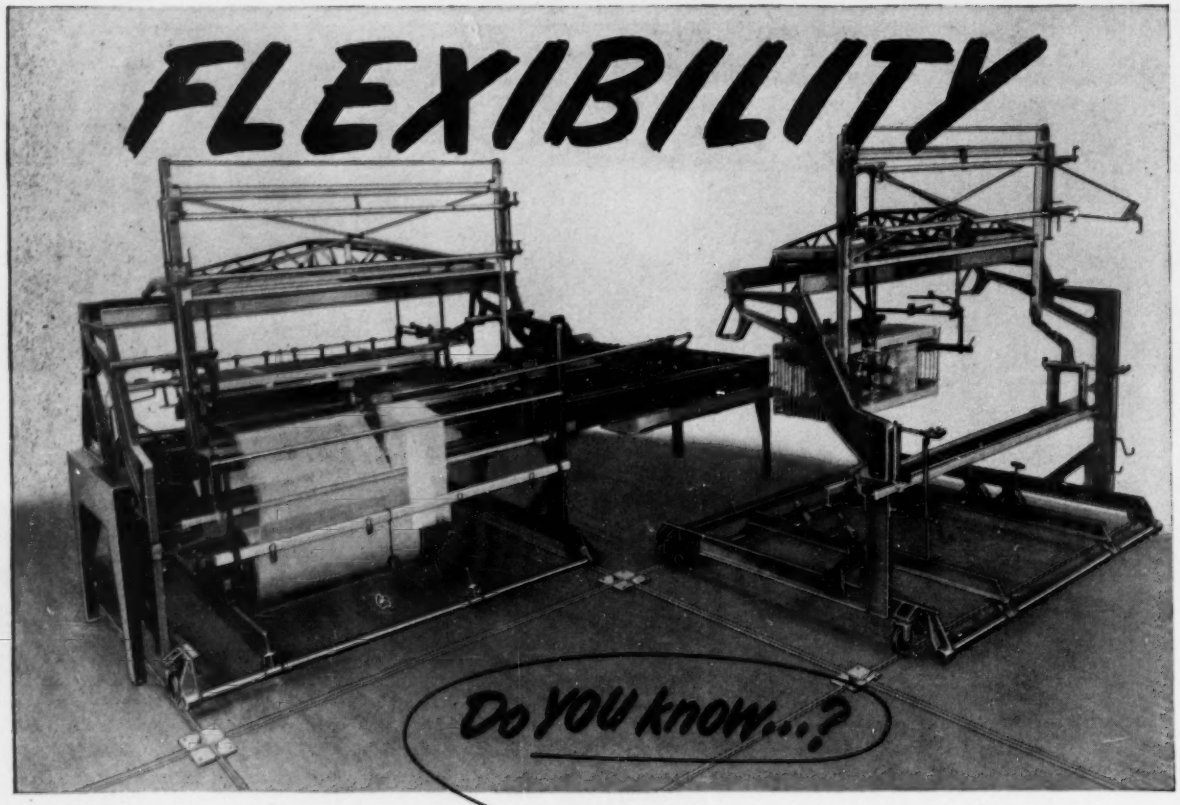
If you've ordered CUPROFIX 52 before, you know it's an order worth repeating. If you haven't, any Sandoz representative will be glad to show you how this improved Cuprofix helps you deliver first-grade quality at lower cost than ever before. Sandoz branches in Hudson, Mass.; Fairlawn, N.J.; Philadelphia; Charlotte; Cincinnati; Los Angeles; Montreal; Toronto. Sandoz Chemical Works, Inc., 61 Van Dam Street, New York 13, N.Y.

B.3.6

SANDOZ

SANDOZ

THINKS AHEAD WITH TEXTILES



BARBER-COLMAN

WARP DRAWING MACHINE

- That these machines will draw a range from 15 denier to 350, or the equivalent in other counts.
- That style changes are *easily* made.
- That you can vary the materials being drawn with *no time lost.*
- That varying the width of warp involves *no* mechanical changes.
- That heddle frame lengths may vary.
- That a machine will accommodate heddles from 11″ to 17″ deep.
- That beams up to 32″ head can be handled.
- That while one warp is drawing, you can be loading or unloading others.
- That a machine will draw from flat sheet or leased warp, two of either or any combination.

BARBER COLMAN

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • WARP DRAWING MACHINES

BARBER-COLMAN COMPANY

ROCKFORD • ILLINOIS • U. S. A.

FRAMINGHAM, MASS., U. S. A. GREENVILLE, S. C., U.S.A. MANCHESTER, ENGLAND MUNICH, GERMANY

INDIA
Batlibai & Company
Forbes Street, Fort
Bombay, India

MEXICO
J. Rabasa
Isabel la Catolica 45-913
Apartado 7348
Mexico D.F., Mexico

BRAZIL
Quimamil S.A. Anilinas
e Representacoes
Rua Glicerio 537/547
Caixa 5658 e 3431
Sao Paulo, Brazil

JAPAN
Nanko Bussan K. K.
Sampin Building
Kitakyutaro-machi 3-chome
Higashi-ku, Osaka, Japan

MIDDLE EAST
Arlind Corporation
65 Bedford Street
Stamford, Connecticut

ANOTHER PROFIT-MAKER from U.S. TEXTILE

a new, low-cost HEADLESS PACKAGE twister

with new shock-proof traverse motion

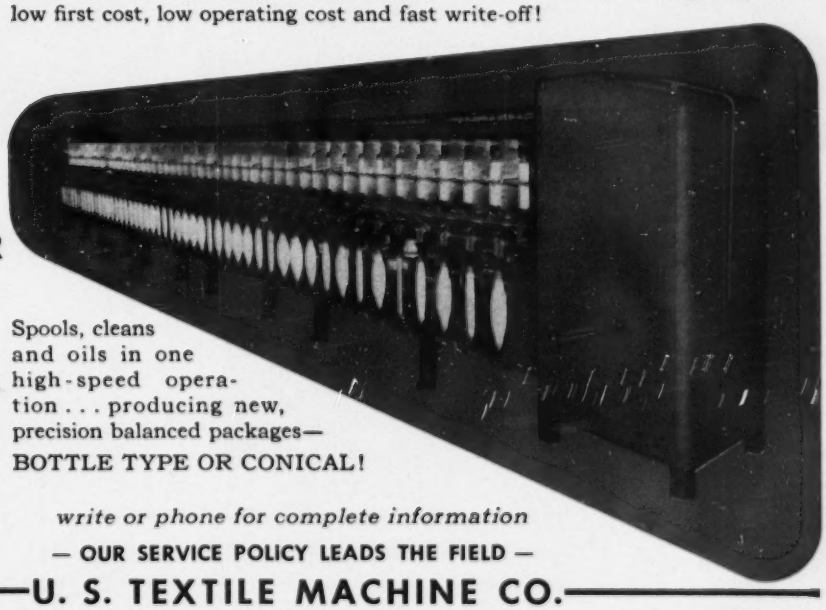
available with *stationary mandrels to handle paper tube packages!*

NEW U.S. ACME
JUMBO DOUBLE-DECK TWISTER

A NEW, NARROW-WIDTH COMBINATION MACHINE that builds over-wind or under-wind packages from STRAIGHT, CONICAL or BOTTLE-TYPE SUPPLY PACKAGES! Here's a twister that gives you low first cost, low operating cost and fast write-off!

the new SHORT-CUT METHOD pair!

U.S. ACME
VERTICAL SPOOLER

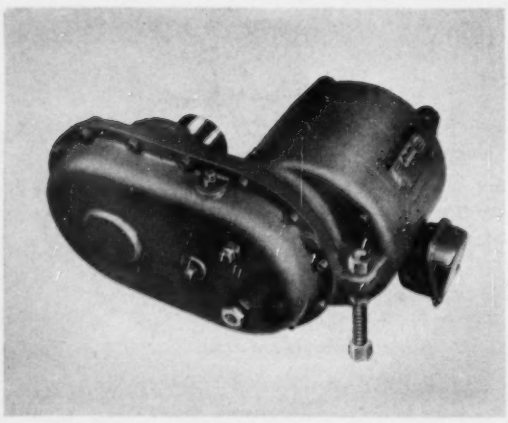


Spools, cleans and oils in one high-speed operation . . . producing new, precision balanced packages—
BOTTLE TYPE OR CONICAL!

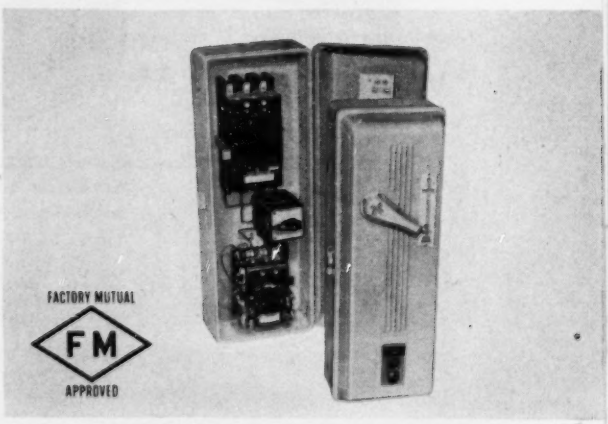
write or phone for complete information

— OUR SERVICE POLICY LEADS THE FIELD —

U. S. TEXTILE MACHINE CO.
SCRANTON 8, PENNA.



High starting torque from Westinghouse Geared Cotton Card Drives provides fast, smooth acceleration. Cards are started and brought to speed with no shock or strain to the machines. Since no belting is required, there's no chance of belt slippage. Card speed remains constant and cotton quality high.



Specially engineered card controllers from Westinghouse have these features that assure more efficient, overall card room operation: fast, sure arc quenching; dependable overload protection; lint-tight enclosures; positive circuit protection and tamperproof reversing switches. Westinghouse circuit breaker combination is shown here.

TIPS ON HOW TO SHIFT WITH THE MARKET

Modernize in easy stages with the new Westinghouse Cotton Card Drive

Here's a proven way to save money in your card room—with less risk to your investment in a shifting market. Equip your cards with the new individual Westinghouse Cotton Card Drives. Convert a few cards at a time, or many, depending on market conditions.

Easy installation of these separate drives means no disruption of card room operation or moving of cards. Each drive is quickly mounted on card cylinder shaft—no mounting platform or special alignment required.

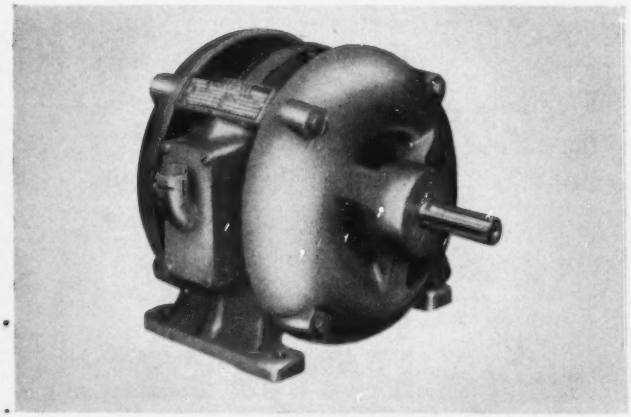
Higher card room efficiency results from converting to individual card drives. By eliminating overhead lineshafting and belting, you improve card room efficiency as much as 25%. Westinghouse geared double-reduction drives deliver maximum power to each machine. With individual drives, cards can be operated selectively. No power is wasted on idle machines. Costly work stoppage due to failure of the main drive motor is eliminated, too.

Maintenance needs are reduced with installation of these Westinghouse Cotton Card Drives. No belting to shorten, dress, repair or inspect. Servicing, cleaning and lubrication of overhead lineshafts are eliminated. Westinghouse individual card drives require practically no attention.

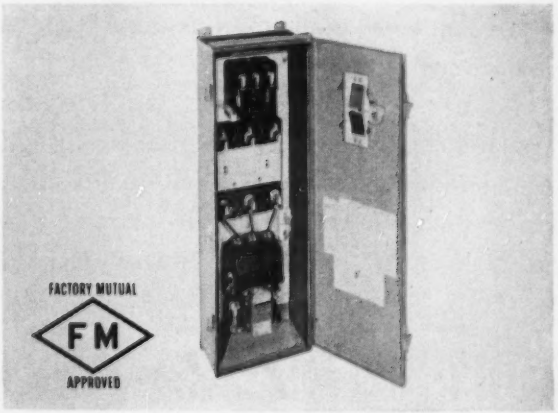
Westinghouse lint-tight controller is specifically engineered for cotton card application. With Westinghouse Factory Mutual Approved controls, the danger of fire from lint or dust reaching starter contacts is minimized. Instant action of relays assures positive overload protection. Contact points are protected against pitting by exclusive "De-ion®" arc quenchers. Reversing switch, used during grinding, is mounted inside the controller to avoid accidental reversal. Enclosure is Bonderized for protection against rust and corrosion.

Westinghouse service is complete. Whether you're modernizing gradually, expanding or building, call your nearby Westinghouse representative early in your planning. He'll review your requirements and suggest how expert Westinghouse planning assistance and efficient equipment can save you money. At the same time, ask for B-6375 *New Westinghouse Cotton Card Drive;* or write Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pennsylvania. MP-3006

YOU CAN BE SURE...IF IT'S Westinghouse



For many other applications Westinghouse lint-free motors give added dependability and reduced maintenance. Aerodynamic design of the frame keeps air stream moving freely—lint can't stick. Sealed pre-lubricated bearings eliminate costly greasing schedules. Inspection is easy with only four bolts on one-piece end bracket.



Westinghouse lint-tight combination Linestarters with NEMA XII enclosures combine dependable overload and circuit protection in one compact enclosure. Sponge-Neoprene gaskets between box and cover and external mounting feet eliminate enclosure openings. These design features assure protection against lint, dust, oil and other dripping liquids.

Du Pont ODORLESS* paints mean... BUSINESS AS USUAL

Now you can paint busy areas without interrupting normal routine

Solve paint-odor problems everywhere! New Du Pont Odorless Paints make annoying paint smell a thing of the past while painting is going on!

Available in all 3 sheens: gloss, semi-gloss and flat, these new paints make maintenance painting in mills, factories, offices, stores, schools and hospitals possible at *any* time—without inconvenience to anyone!

Du Pont chemists have completely reformulated these finest-quality alkyd-base finishes to provide easier brushing, quicker drying, better lap time and excellent hiding . . . give a better balance of wanted properties than ever before! For full information on new Du Pont Odorless Paints, contact your painting contractor today or write E. I. du Pont de Nemours & Co. (Inc.), Finishes Division, Wilmington 98, Delaware.

**While there are no pungent solvent odors during application, a mild resin odor may be noticed during the drying stage.*

DU PONT *Color Conditioning* PAINTS
NOW ODORLESS

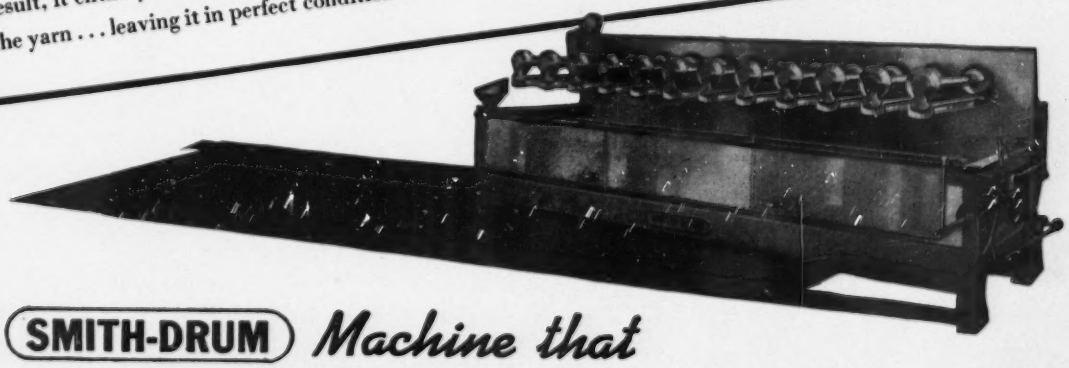
BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

. . . and there's ONLY ONE WAY to Prevent it.

If your present skein dyeing equipment results in snarled yarn or broken filaments, you are incurring needless extra cost and time in back-winding. There is one sure way to end this waste and *only* one . . . install the SMITH-DRUM Type CSD Skein Dyeing Machine.

This is the machine that introduced the principle of "moving the liquor instead of the yarn." As a result, it entirely eliminates tangling or breaking of the yarn . . . leaving it in perfect condition for winding. It also dyes yarn more quickly and uniformly than other methods, resulting in savings of from 10% to 30%. If you dye filament rayon, nylon and other synthetic yarns or fine count cotton yarns in skein form, it will pay you to get the facts on this proven money-saving machine. Write . . .

SMITH, DRUM & COMPANY
432 W. Allegheny Ave., Phila. 33, Pa.

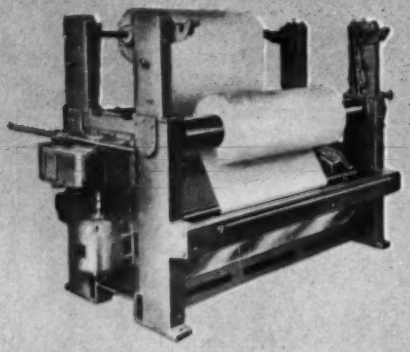


The **SMITH-DRUM** *Machine that Moves the Liquor Instead of the Yarn!*

Blueprint for Profit

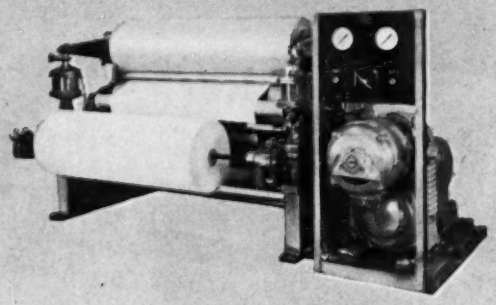
The competitive market of today calls for careful planning by management to assure profits on each operation, through better production with sustained quality of processed fabrics. Processing equipment which delivers greater production without sacrificing quality is a must.

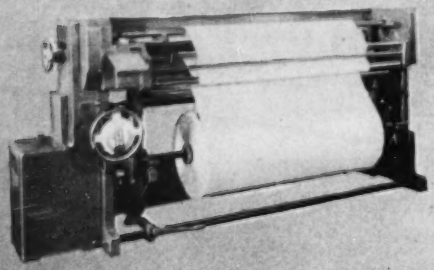
For over 53 years of building for the wet processing industry Van Vlaanderen has set the standard with equipment ruggedly built and designed to give sustained trouble-free operation with high quality work. Consult us for a single machine or an entire plant.



PROFIT-MAKING JIG—The V.V. 888 (left) is now the standard for sustained production, quality performance and trouble-free service in many dye plants. It features silent worm-type drive, operating in oil; drag-free multiple dry-disk friction clutches; clean, enclosed roller chains. Widely spaced roll centers permit large batches. Other quality features: massive, vibration-free frames of cast iron; stainless steel tank with side overflow; oscillating expander; stainless steel batch rolls, mounted on anti-friction bearings and malleable iron brakes.

PROFIT-MAKING PADDER—The V.V. Heavy Duty Padder (right) is for modern resin impregnating, finishing and dyeing. Correct design and rugged construction insure quality work and long life. FEATURES: slip clutch take-up, with friction-plate clutches; variable speed drive; malleable iron brakes; pneumatic pressure controls each cylinder separately; stainless steel guide rolls; easily removed padder rolls on anti-friction bearings.





PROFIT-MAKING TUBER—The V.V. Tuber (left) handles most fabrics, including those that benefit from tensionless processing. FEATURES: uniform package density as set by operator; constant cloth speed to 200 Y.P.M.; accurate measurement through driven measuring drum with minimum tension between let-off and drum; a better package with even selvages; easy loading and operation; non-slip, long wearing 1 yd. measuring roll; easily operated selvage control.

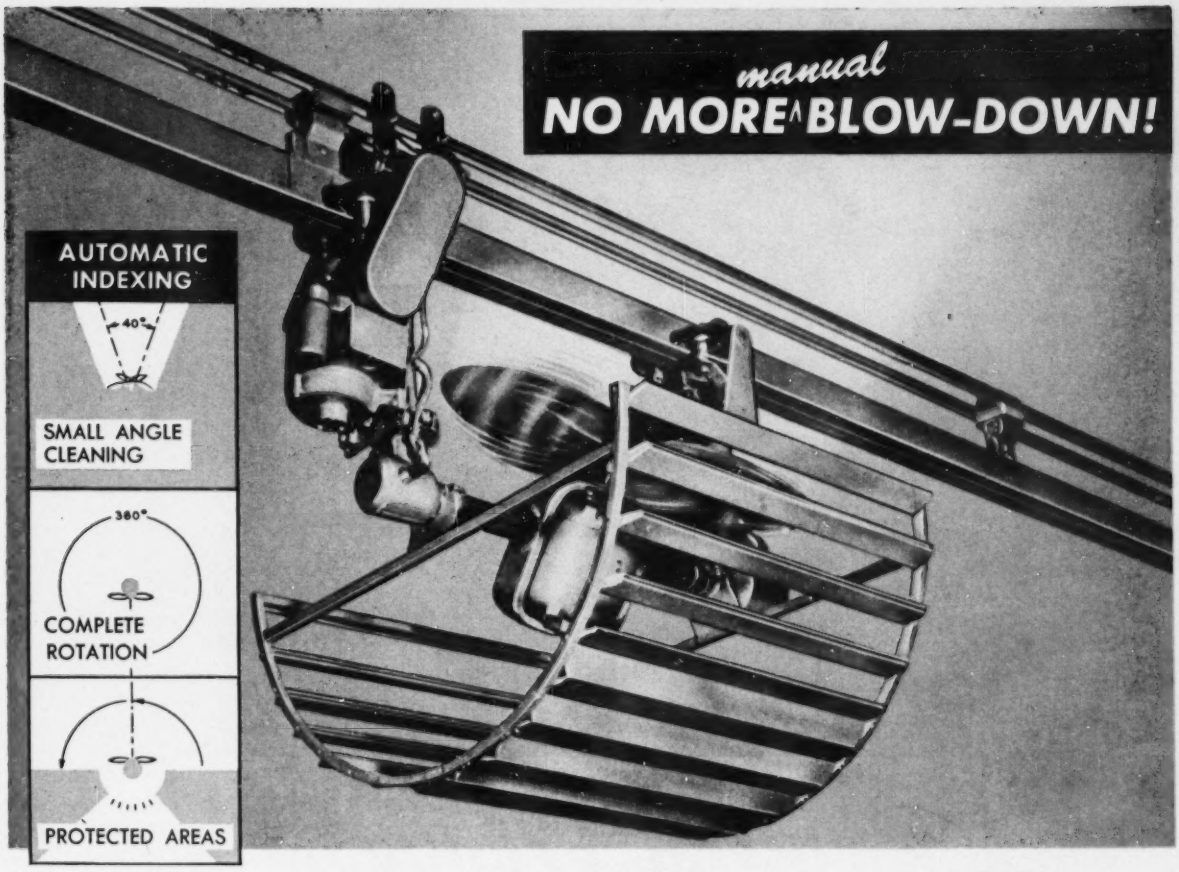
It has been a 50 year policy of Van Vlaanderen to put the most value possible into every machine. Men long in the Dyeing and Finishing Industry accept Van Vlaanderen Equipment as standard because they know from experience that they get high quality work with top production and long service.

VAN VLAANDEREN MACHINE COMPANY

370 Straight Street, • Paterson 3, New Jersey

In the South — Parrott and Ballentine • 610 South Carolina National Bank Building • Greenville, South Carolina

WORLD'S LARGEST MANUFACTURER OF MACHINES FOR PROCESSING MODERN FABRICS



Bahnson's New ALLRED Traveling Cleaner Cleans Anywhere—or Everywhere—*Automatically!*

Forget those weekly shutdowns for cleaning walls, ceilings, overhead equipment! Reduce maintenance costs, improve yarn quality and achieve fulltime operation with Allred Traveling Cleaners—newest development textile-engineered by Bahnson.

The *only* traveling cleaner that blows perpendicular to its track, the Allred cleans walls, *both* sides of ceiling beams, sash openings—thoroughly blows-down *every* surface within its predetermined cleaning pattern.

Completely automatic indexing sets the Allred Cleaner to blow at one angle for a complete circuit of its ceiling-suspended track, then rotate its airflow direction for its next circuit.

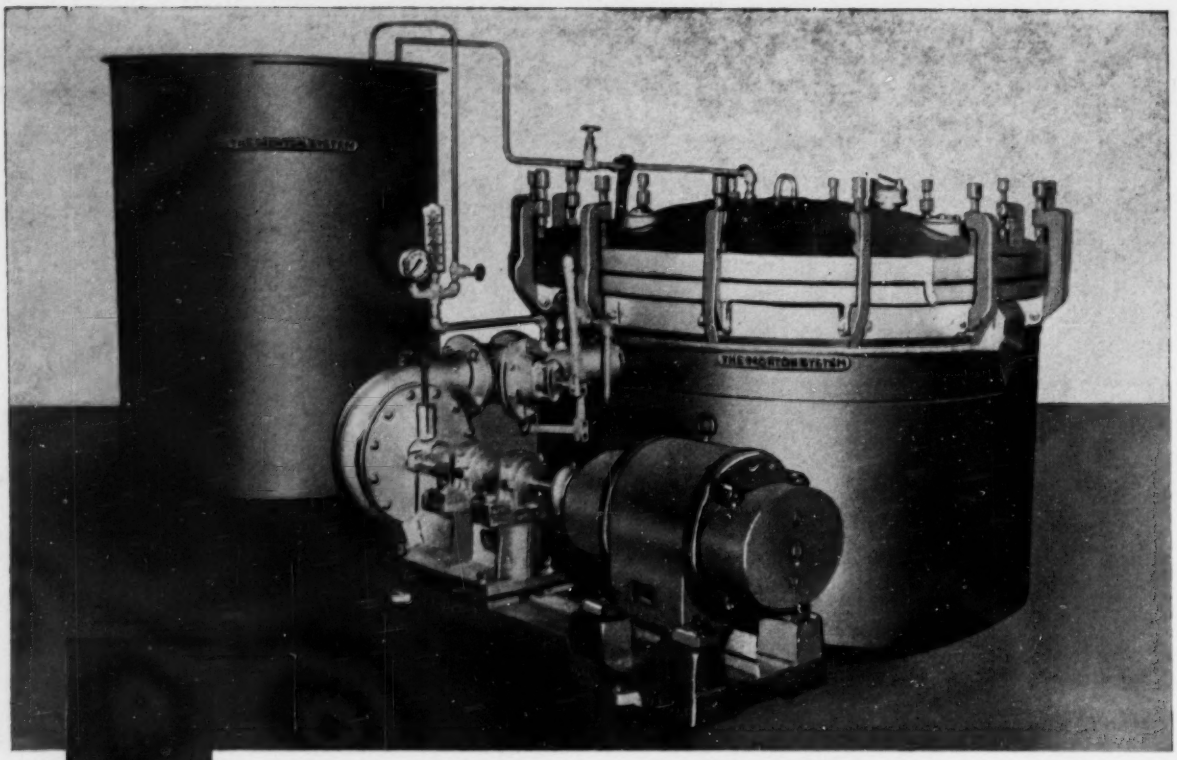
Adjustable for any cleaning angle from 40° to 360°, this is the only cleaner that can be set to provide complete cleaning from floor to ceiling with a single unit. If needed, U-Shield blades cut off any portion of airblast to protect card web or other critical areas.

Since it prevents the accumulation of lint, the Allred Cleaner increases the quality of your yarn and cloth by eliminating slubs and gouts.

For full details on the Allred Cleaner, write for your free copy of Bulletin 21-A.

Bahnson COMPANY
WINSTON-SALEM, N. C.

AIR CONDITIONING • HUMIDIFICATION • CLEANING



MODERN DYEHOUSE MACHINERY MEANS INCREASED PROFITS!

In these days when the textile situation is so highly competitive, the dyehouse with modern, efficient machinery is the dyehouse that makes the profit. Today, as never before in the history of the industry, modernization of method and equipment is a must!

THE MORTON SYSTEM DOUBLE CIRCULATING STOCK DYEING MACHINE, shown above, was the first machine to successfully dye acrylic and similar synthetic fibers in commercial lots at elevated temperatures.

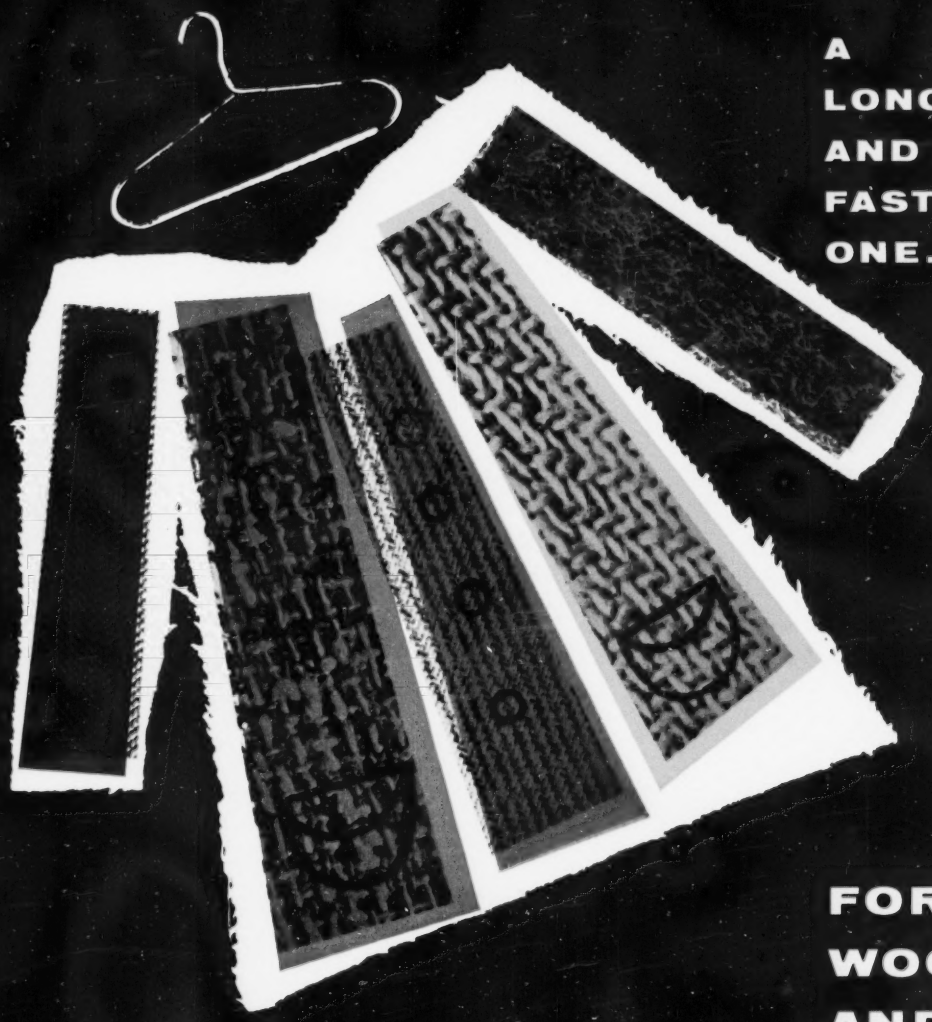
Morton engineers have again led the way with this simple-to-operate, insurance-company approved machine. Single batches of four and five thousand pounds are handled easily, as are any batches required by mill production. Construction is of Type 316-18-8 SMO Stainless Steel. Call your Morton Engineer for details today.

MORTON MACHINE WORKS, INC.

COLUMBUS, GEORGIA

PHILADELPHIA 38, PA.
General Textile Machinery Co.
1139-51 East Chelten Avenue

ATLANTA 3, GEORGIA
J. R. Angel, Agency
Mortgage Guarantee Bldg.



A
LONG LIFE...
AND A
FAST
ONE...

FOR
WOOL
AND
NYLON

SUPRALANS

for

- **unvarying reproducibility of shades**
  good to very good light and wet fastness
- **shorter dyeing time**

The simplicity of the neutral dyeing method of application yielding level fast shades without the aid of a leveling agent now permits wool dyers to achieve results in quality which were not possible prior to the introduction of SUPRALANS.

Better tensile strength, preservation of fibre texture, equal exhaustion properties and uniformity of shade on various types of wool are assured factors which can be assumed with SUPRALANS.

A few minutes conversation with GDC technical and sales representatives will serve to convincingly explain the exceptional dyeing characteristics of SUPRALANS.

From Research to Reality

gdc gaf

GENERAL DYESTUFF CORPORATION

A SALES DIVISION OF GENERAL ANILINE & FILM CORPORATION

435 HUDSON STREET • NEW YORK 14, NEW YORK

BOSTON • CHARLOTTE • CHATTANOOGA • CHICAGO • NEW YORK • PHILADELPHIA • PORTLAND, ORE. • PROVIDENCE • SAN FRANCISCO

Pictured above is some of the trash extracted from machine harvested cotton by one of the CEN-TENNIAL TEXTILE FIBER OPENERS in operation at Swift Manufacturing Company, Columbus, Georgia. You will note that only the trash has been removed. No spinnable fiber goes to waste.

Since lost fiber is lost money, it will pay you to investigate the CEN-TENNIAL TEXTILE FIBER OPENER with regard to your opening lines.

CEN-TENNIAL COTTON GIN CO.
COLUMBUS, GEORGIA

What the TEXTILE MILLS are doing

(Continued from page 40)

continue to operate as in the past, no changes being contemplated. David S. Seamen, Jr., treasurer of the firm, has full charge of plant operations.

Freedoms Foundation at Valley Forge, Pa., recently voted honor certificate awards to the **Consolidated Textile Co.** and to Verne Bobbitt, former editor of the "Consolidated Textile News" and now personnel director of the firm. Object of the Foundation's annual awards is to honor those citizens and publications who have made outstanding efforts to improve public understanding and appreciation of "our basic Constitutional Rights and Freedoms inherent in the American Way of Life, through the things they write, do, or say."

Fieldcrest Mills, Inc., has announced that it will do commission dyeing, bleaching, and finishing at its Spray, N. C., plants. Other news from the firm includes a time study course at Spray, in which twelve foremen are enrolled. This course includes study and actual practice in the technique of taking time studies on mill operations, and is to keep supervisors informed of the methods and procedures used by the Standards Department. The personnel of the Towel Mill are in the midst of a comprehensive quality program which hopes to result in a 50% reduction in seconds and thirds by the end of the year. Several technical improvements have been made, and members of supervision, fixers, and other employees are working on more ideas to achieve the goal they have set.

General Tire & Rubber Co. has acquired **Textileather Corp.** of Toledo, O., and **Bolta Corp.** of Lawrence, Mass., making it what is claimed to be the world's largest manufacturer of vinyl film today.

Georgia Duck & Cordage Mill, Scottdale, Ga., recently installed equipment for the manufacture of flake yarns.

Gotham Hosiery Co. has consolidated its two Philadelphia plants, all facilities being located in the Erie Ave. and M. St. mill. The vacated building at Jasper Street has been offered for sale.

The two firms of **Inman (S. C.) Mills** and **Riverdale Mills,** Enoree, S. C., have been merged, Inman Mills being the surviving corporation. There will be no change in officers.

Two plants were recently chartered to operate in Jefferson, S. C.—**Jefferson Mills, Inc.,** which will manufacture flat knitted dress goods, and **Monticello Knitting Mills, Inc.,** athletic shirts. Both are owned by Cary C. Boshamer, who established the Jefferson Bleachery a year ago.

Hamilton Dyeing & Finishing Corp., recently organized, has begun operations at 102-110 Fifth St., Paterson, N. J. Joseph Maselli, formerly with Ardsley Dye & Finishing Co., is president and dyer. Julius D. Rocco, finisher for the former Normandie Finishing Co., is secretary-treasurer and finisher.

Lincolnfield Mills, Lincoln, Me., re-

(Continued on page 227)

NON-FLUID OIL
TRADE MARK REGISTERED

ASSURES
TROUBLE-PROOF CARDING

Reason: NON-FLUID OIL stays where it belongs—in comb boxes—in bearings; it lubricates constantly and dependably—maintaining perfect card adjustments. Result: More and better sliver at less cost.

With ordinary oil creeping *onto* the goods instead of staying *in* the bearings, the accurate and close adjustment essential for perfect carding cannot be maintained.

Be sure. Send for Bulletin T5-TI plus a free testing sample of NON-FLUID OIL. Write for them now, without cost or obligation.

NEW YORK & NEW JERSEY LUBRICANT COMPANY
392 MADISON AVE., NEW YORK 17, N. Y.
WORKS NEWARK, N. J.

Southern District Manager: Lewis W. Thomason, Jr.
Charlotte, N. C.

WAREHOUSES
Birmingham, Ala. Greenville, S. C.
Atlanta, Ga. Chicago, Ill.
Columbus, Ga. Springfield, Mass.
Charlotte, N. C. Detroit, Mich.
Greensboro, N. C. St. Louis, Mo.
Providence, R. I.

NON-FLUID OIL is not the name of a general class of lubricants, but is a specific product of our manufacture.

YOUR JOB IS HARDER...

But Nopco can help you find the right sizing materials for Dacron, nylon, viscose and acetate rayons

Miranda Aurantia has a far easier task than you textile men. He has only one fiber to "size." You have to choose the size that will give you the best possible results with a myriad of the newer man-made fibers—not to mention the conventional types.

There is one sure source you can count on to help you always find "the right size". The chemists at Nopco set out to find the best sizing materials—or combinations of materials—for each of the modern fibers even before the fibers themselves were widely accepted. The sizes and additives suggested below have won high praise from every textile man who has tried them.

*Reg. U. S. Pat. Off.

†"Dacron" is a registered trade-mark of E. I. DuPont de Nemours & Co., Inc.

No general formula will serve every mill, of course; there are too many variables. Be sure to give us all the technical data you have when asking for a recommendation. The Nopco Specialists will work closely with you to help you bring out the best in your fabrics.

FOR DACRON†—NOPCOSIZE D

Easily prepared • Non-Foaming • Excellent solution storage life • No sticking on dry cans • Good bonding • No shedding • Non-tacky, non-gummy under high r.h. conditions • High loom efficiency.

FOR NYLON—NOPCOSIZE N

The only PAA size which gives a pliable film. Never gets brittle. Internally plasticized—allows a greater depth of size protection without causing tear drop in fabrics. Fabrics scour out to the cleanest goods yet obtained.

FOR VISCOSE RAYON—NOPCO 1111

A warp size softener, incorporated in the warp size formula—prevents tear drops.

FOR ACETATE RAYON—NOPCO 1111 AND 1440

For greater loom efficiency and increased production, minimum shedding, add both a softener (Nopco 1111) and a penetrant (Nopco 1440) to your regular sizing material.

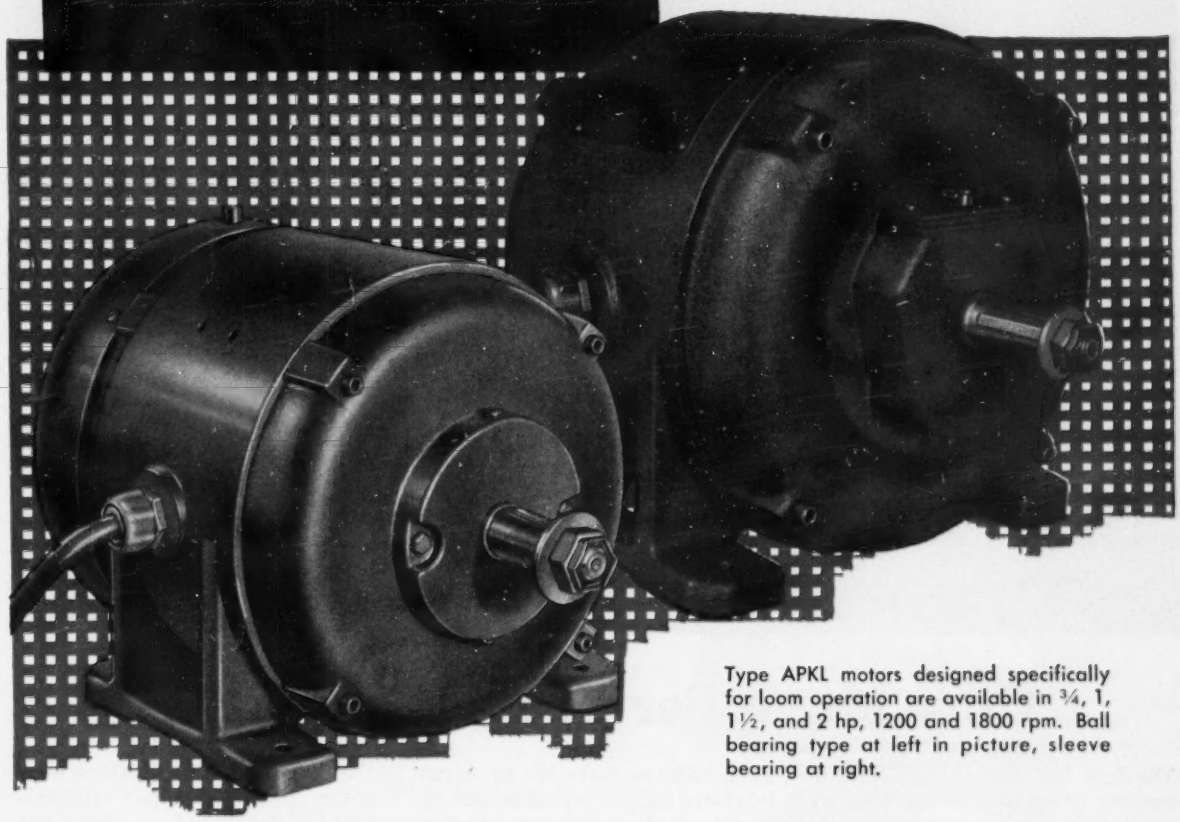
NOPCO

Chemical Company, Harrison, N. J.

Boston • Chicago • Cedartown, Ga. • Richmond, Calif. • London, Ont.

New Loom Motor

Specially built for high speed loom operation



Type APKL motors designed specifically for loom operation are available in ¾, 1, 1½, and 2 hp, 1200 and 1800 rpm. Ball bearing type at left in picture, sleeve bearing at right.

This entirely new loom motor design is a result of intensive Allis-Chalmers research into the true nature of loom loads at speeds up to 200 picks per minute and more. Several hundred motors of the new design have had more than a year of test in regular mill operations.

Features Proved in Operation

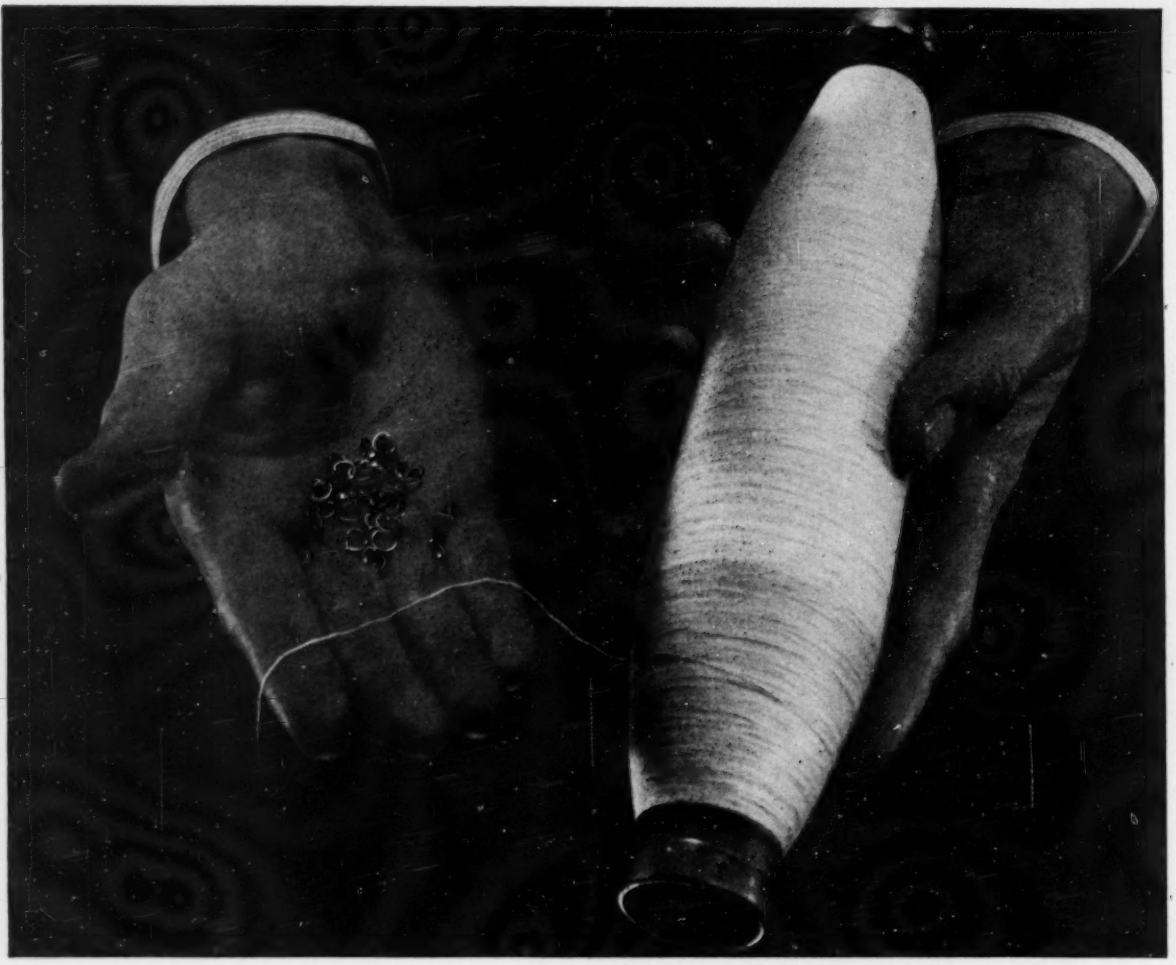
Cast-iron frame is totally enclosed, non-ventilated type that excludes all lint from internal parts, holds bearings in correct alignment and maintains uniform air gap. Feet are machined in a single operation, assuring perfect alignment and easy mounting.

Electrical design is generous. The stator is extra large and of heavy construction to provide electrical capacity and physical strength to meet stresses of rapid load oscillation. The rotor is of largest practical diameter in order to provide optimum flywheel effect (Wk^2). The motor operates at very stable speed under pulsating load conditions.

A-4342

Allis-Chalmers loom motors are available with flywheel where required. Get complete information from your nearby A-C district office or write Allis-Chalmers, Milwaukee 1, Wisconsin, for Bulletin 51B7111B.

ALLIS-CHALMERS



How Much Per Traveler-Pound?

The true test of a traveler is the number of pounds of top quality yarn which can be spun or twisted with it before it wears out. The more yarn produced, the lower your cost per traveler-pound.

Millmen who keep a sharp eye on production costs always judge travelers on this traveler-pound rating. And that's why so many choose Victor Travelers for spinning or twisting.

Victors consistently cost less per traveler-pound for two reasons. First, because there are no better travelers made, by any test of quality and uniformity. Second, because Victor Service Engineers, all mill-trained men, can quickly grasp your special problems, and come up with the right answer.

They can not only recommend the *right* traveler, but can often make other suggestions for improving your quality and production, —whether you are running conventional fibers, synthetics, or blends.

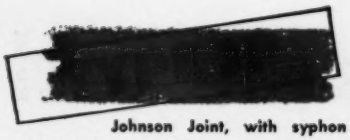
Plan now to talk to a Victor man about your costs per traveler-pound. Write, wire, or phone the nearest Victor office . . . for prompt service.

VICTOR Ring Travelers

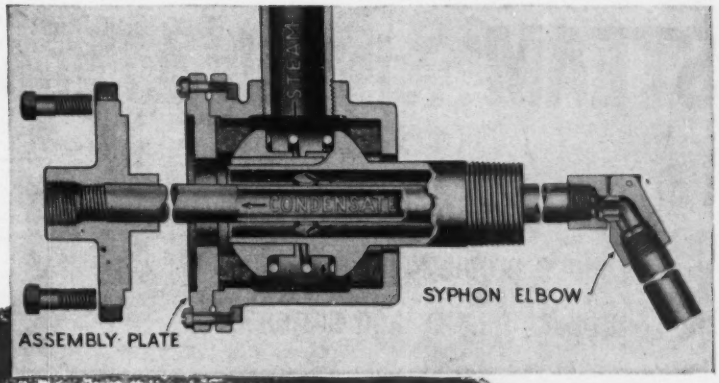
VICTOR RING TRAVELER COMPANY

PROVIDENCE, R. I. . . . . 20 Mathewson St. . . . . Tel. Dexter 1-0737

GASTONIA, N. C. . . . . 914-916 East Franklin Ave. . . . . Tel. 5-0891



Johnson Joint, with syphon elbow. Assembly plate holds joint mechanism in place when head is removed. Syphon pipe and elbow can be inserted or withdrawn without removing the joint body. (This can also be furnished with lugs cast on body for simple rod support.)



Perfect Combinations . . .

In each of these pictures you'll see a combination of welcome new ideas that can stop a lot of operating headaches.

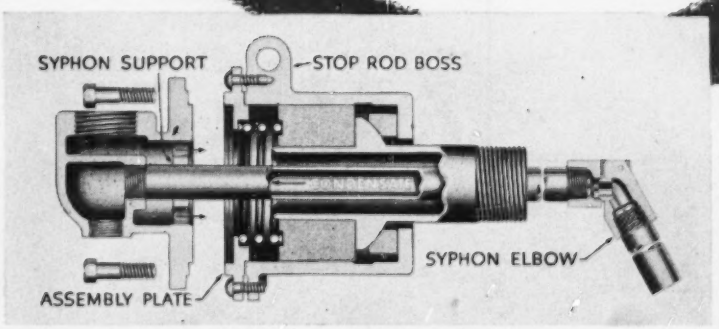
To begin with these are newly redesigned Johnson Joints. They remain completely packless, self-lubricating and self-adjusting as always. But now they are smaller size, lighter weight, with a lower price tag . . . and with wearing parts heavied up to stretch service life as much as 25%.

Teamed up with these is the new Johnson Syphon Elbow. It permits the use of straight pipe for syphon connection, seats itself by its own weight when in position.

Note the special assembly plate in each joint which holds internal parts in position when the head is removed. This means the syphon pipe and elbow can be inserted or withdrawn right through the joint, in many cases while the machine is operating.

Write for New Literature

JOHNSON JOINTS and the new JOHNSON SYPHON ELBOWS



Johnson Joint, with syphon elbow. This is a self-supporting design ideal for replacement use where suitable supports cannot be readily provided. Special assembly plate permits removal of head and syphon pipe without disturbing joint proper.

Products of The Johnson Corporation

81 Wood St., Three Rivers, Mich.

Rotary Pressure Joints • Compressed Air Separators and Aftercoolers
Direct Operated Solenoid Valves • "Instant" Steam Water Heaters

STEAM...is only as good as you use it!

Use steam the right way to reduce production costs, improve product quality and output—

When production slow-downs, high costs, and poor product quality occur, don't always blame the process equipment—often the fault is in *the way steam is used.*

For example, waterlogging caused by improper trapping or poor steam circulation, seriously affects heat transfer, reduces output, and creates production bottlenecks. Improper air venting does the same. Poor temperature control can lower product quality, cause rejects and further raise production costs.

If your plant is suffering from any of these production handicaps, Sarco can help you.

Plant after plant has benefited from Sarco's experience in the process industries. The complete line of Sarco steam traps and temperature controls enables Sarco engineers to offer impartial, expert recommendations on how to make steam work best in your plant.

Why not call on Sarco for engineering recommendations next time you need help. For case histories describing how other plants in your field solved similar problems, write today to Sarco Company, Inc., Empire State Building, New York 1, N.Y.

SARCO

improves product quality and output

why cylinders waterlog

1. Condensate being discharged.
2. Condensate discharged. Syphon pipe fills with steam.
3. Cylinder waterlogs because condensate is blocked by steam lock in syphon pipe. Waterlogging continues until locked steam condenses.

Most machines discharge into closed return systems and low output caused by intermittent waterlogging is often mistakenly accepted as "normal."

How cylinder dryer output was increased 15%

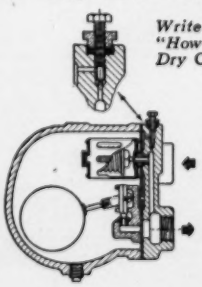
Installation: Eclipse Piece Dye Works, Passaic, N. J.—15-Cylinder piece dryers.

Problem: Air binding and waterlogging caused temperature variations across cylinder faces. Piece goods dried slowly and unevenly.

Solution: A Sarco trap with a built-in *steam-lock release* valve and a thermostatic air vent was installed on each cylinder. Air vents in these traps discharge air, gases and air-steam mixtures which are often 20° *below* steam temperatures.

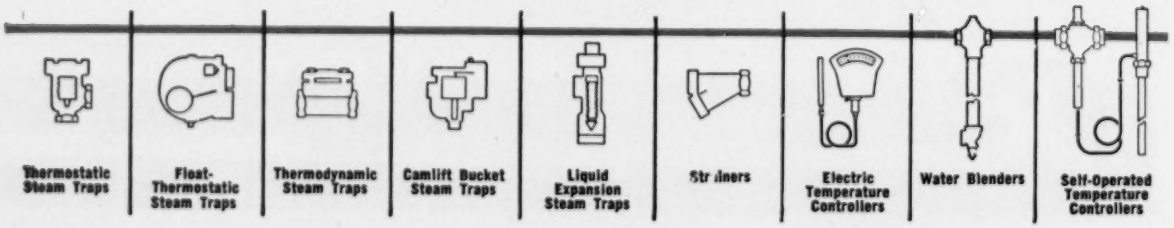
Results: Maximum temperature maintained across each cylinder. Subsequent performance records showed that dryer output increased 15%.

Write for Technical Bulletin No. 2 "How to Increase Output of Your Dry Cans."

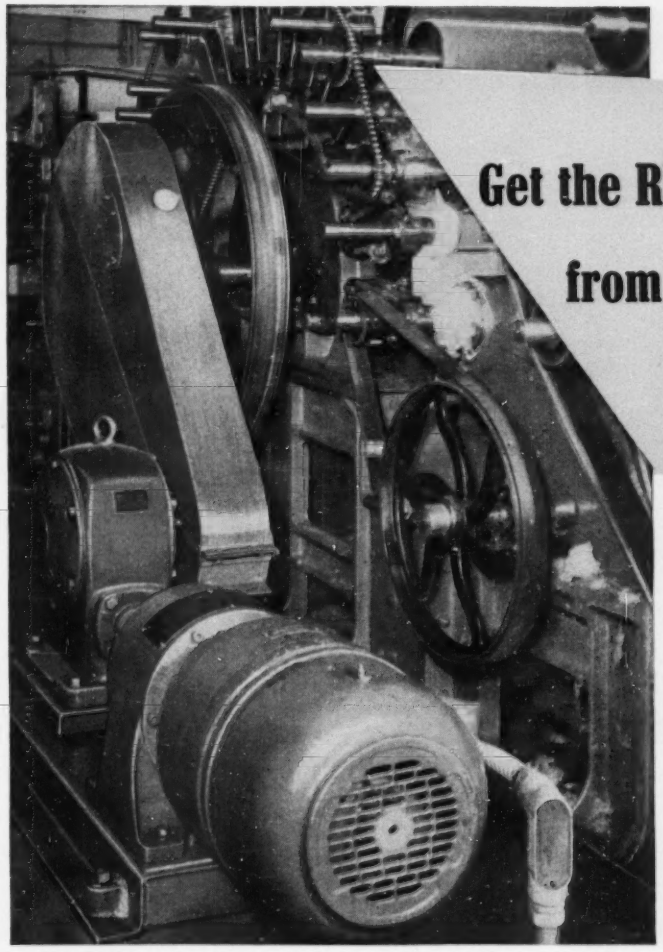


The steam-lock release valve in this Sarco trap prevents intermittent waterlogging by breaking steam locks in the syphon pipe. This large capacity trap discharges condensate as quickly as it collects.

STEAM TRAPS • TEMPERATURE CONTROLLERS • STRAINERS



Thermostatic Steam Traps | Float-Thermostatic Steam Traps | Thermodynamic Steam Traps | Camlift Bucket Steam Traps | Liquid Expansion Steam Traps | Strainers | Electric Temperature Controllers | Water Blenders | Self-Operated Temperature Controllers



Get the RIGHT drive combination from LINK-BELT's complete pre-integrated line

Link-Belt drive for this second breaker and finisher includes 10-hp Electrofluid drive, coupling, worm gear drive, silent chain and welded steel baseplate.

YOU'LL find your power transmission costs are lower in two ways when you use Link-Belt drives. Only Link-Belt offers such a broad range of types and sizes in helical, gearmotor, herringbone and worm gear designs . . . in fluid and variable speed drives . . . in chains, couplings, bearings and shafting. What's more, Link-Belt gives you pre-engineered correlation of all its power transmission equipment . . . *right from stock.*

This exclusive combination not only simplifies even the most complex problem —it actually cuts your costs. Here's how:

You save on installation! Dimensions of all components are correlated with those of the enclosed drives. There's no alignment problem . . . no need to exchange drawings with other suppliers.

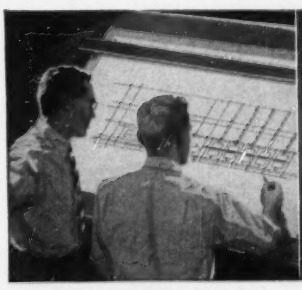
You save on operating costs! Power consumption is lower because overall efficiency is assured. And maintenance costs go down when you rely on quality-built Link-Belt equipment.

Next time you're faced with a power transmission job, let us figure the best combination for your exact requirements. Call the Link-Belt sales office or distributor nearest you for all the facts.

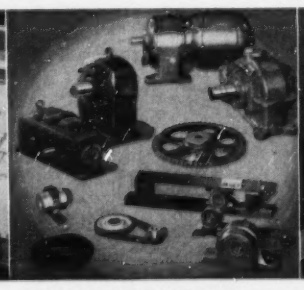
LINK-BELT

POWER TRANSMISSION EQUIPMENT

LINK-BELT COMPANY: Executive Offices, 307 N. Michigan Ave., Chicago 1. To Serve Industry There Are Link-Belt Plants, Sales Offices, Stock Carrying Factory Branch Stores and Distributors in All Principal Cities. Export Office: New York 7; Canada, Scarboro (Toronto 13); Australia, Marrickville, N.S.W.; South Africa, Springs. Representatives Throughout the World. 13,479

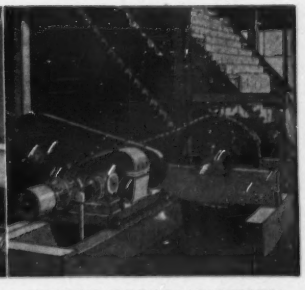


OVERALL ENGINEERING. Vast experience of design and field engineering staff integrates all factors, assures expert planning.

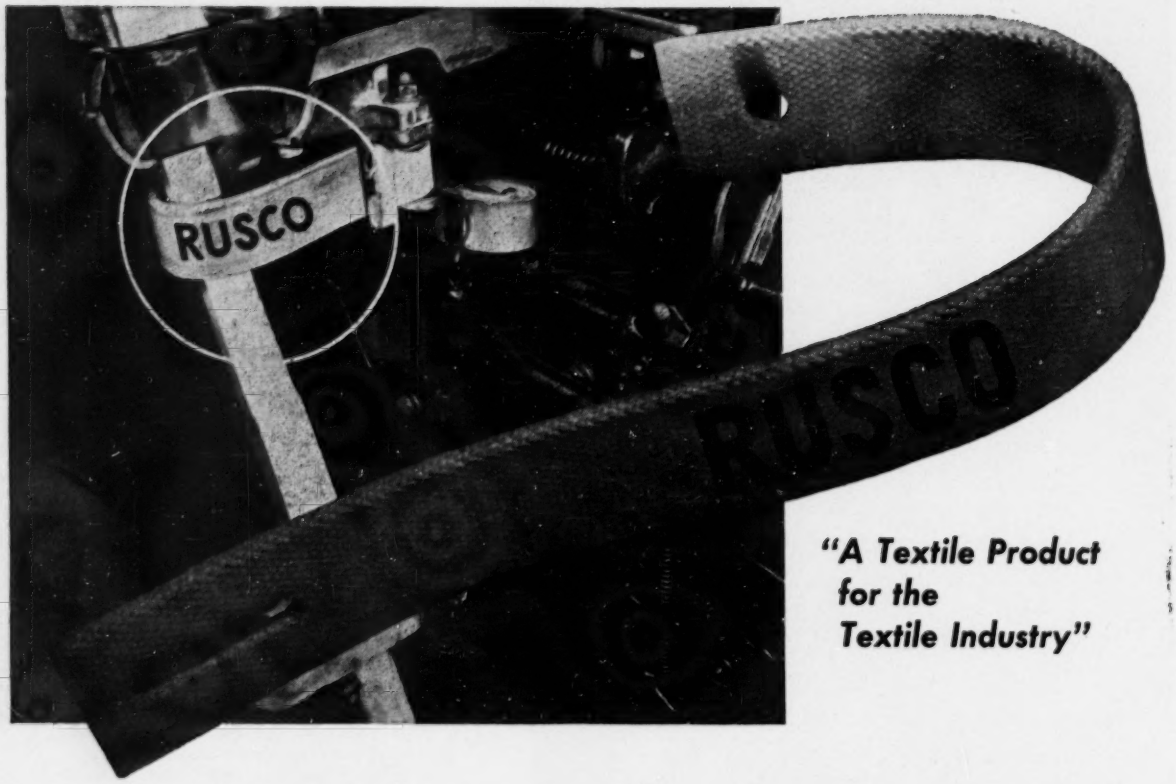


ALL COMPONENTS. Link-Belt builds a complete line of power transmission machinery, provides components of top efficiency.

PRE-ASSEMBLY. Sprockets can be mounted in our shops—bearings fully protected. No need to get drawings from other sources.



SINGLE RESPONSIBILITY. When you rely on Link-Belt as a source, we accept responsibility for overall operation.



"A Textile Product for the Textile Industry"

NEW RUSCO WOVEN CHECK STRAPS MAKE ALL OTHERS OBSOLETE

Only Rusco offers a check strap so completely free from stretch and shrink that initial settings remain constant throughout the entire life of the strap.

Rusco Woven Check Straps cut your costs three ways: (1) savings on initial cost, (2) savings from time for adjustments, and (3) savings because of longer life.

Our experienced representatives will gladly help you streamline your mill operation by installing Rusco Woven Check Straps on your looms. Write today for full details.

RUSCO WOVEN CHECK STRAPS ARE AVAILABLE BOTH FLAT AND CURVED

CHECK BETTER
LAST LONGER
WILL NOT STRETCH
WILL NOT LOOP
NOT AFFECTED BY HUMIDITY
NO ADJUSTMENT AFTER INSTALLATION
LESS COST THAN LEATHER

For complete Information, Specifications and Prices, write:
MATTHEWS EQUIPMENT COMPANY, Providence, R.I., Atlanta, Ga., Greenville, S.C.
A product of **THE RUSSELL MANUFACTURING COMPANY**
Middletown, Conn. • Atlanta, Ga. • Bennettsville, S.C.

Keep them spinning clean and free

with Gulfspin

Gulfspin works three ways to keep spindles clean. First, it's oxidation stabilized to resist sludge formation. Second, Gulfspin prevents contaminants from depositing on spindle parts. Third, Gulfspin provides effective protection against rust, especially important in cast-iron bolsters where rusting causes bolster wear.

Because deposits are not a problem with Gulfspin, spindle vibration is kept to a minimum and dampening devices function normally.

And you reduce power costs with Gulfspin! Ordinary spindle oils often thicken after a few months of service, resulting in about one watt per spindle increase in power consumption. Not so with Gulfspin! This outstanding oil shows no increase in viscosity after many months of service.

Won't you give us a chance to prove the advantages of Gulfspin on at least one of your frames. Write, wire, or phone your nearest Gulf office and ask a Gulf Sales Engineer to call.

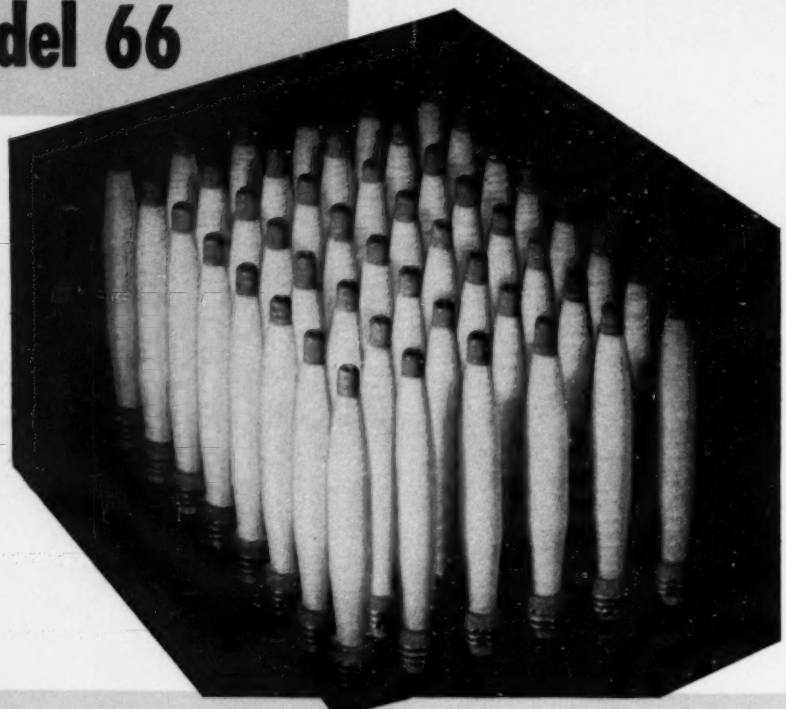
GULF INDUSTRIAL LUBRICATION

Gulf Oil Corporation • Gulf Refining Company

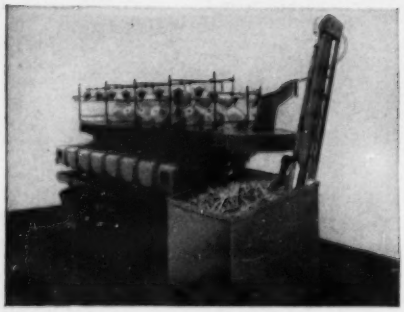
Gulf Building, Pittsburgh 30, Pa.

Foster-Muschamp Model 66

AUTOMATIC FILLING WINDER



It makes bobbins like these 300% faster



Model 66 with Centralized Automatic Bobbin Replenisher and Automatic Pinboarding Attachment. Write for data on this highly flexible new machine, suitable for many different types of mills.

Note the uniformity and practically perfect build of these bobbins — wound at a spindle speed of 15,000 rpm *while preserving the original quality of the yarn.* One operator can handle 5000 net pounds of yarn per 8 hour shift at a cost of about 19 mills per pound of yarn quilled.

Because operation is so fully automatic, production is the highest and winding cost is the lowest yet achieved. Operator's only duty is to keep the magazine creel loaded and thread up. Everything else is automatic — including conveying empty bobbins to spindles, starting and stopping spindles, doffing of full bobbins and conveying them to pinboards, or bobbin boxes.

Standard machine is 32 spindles. Different counts or colors can be run on different spindles of the same machine at the same time, and it will wind equally well all types of yarn and fibers — from coarse counts to finest, filament or spun.

FOSTER MACHINE COMPANY

Westfield, Massachusetts, U. S. A.

Southern office — Johnston Bldg., Charlotte, N. C.

Four Aces
OF DYEING

Nonionic* Dyeing Assistants

♥ **Telkanol O**—Effective levelling agent and dyeing assistant for wool, unions and furs. Its strong dispersing action for oils and fats makes it an excellent scouring agent in the acid or alkaline scouring of wool and wool wastes. Exhibits high resistance to acids, alkalies, salts and hard waters.

♠ **Dextrol Fast Salt M**—Dyeing assistant for acid metallized dyestuffs on wool. Reduces amount of sulfuric acid normally needed, cuts dyeing time, increases solidity of shade. Color fastness is improved for perspiration, rubbing and decatizing. Helps prevent loss of tensile strength of fiber.

♦ **Rexan O**—Promotes level dyeing and penetration with direct, basic and vat dyestuffs on all fibers except wool. Exhibits good wetting powers in dyebaths. Eliminates use of glue in vat dyeing and retards rate of exhaustion in first few minutes without impairing total color yield on the fiber.

♣ **Telkanite M**—Highly effective stabilizing agent and assistant for all types of napthol dyeing and printing. Has high stability and dispersing properties in acid medium which makes it particularly suitable for the pasting up and dispersing of bases.

*Polyoxyethylated fatty alcohol

dexter
Textile Chemicals

TEXTILE CHEMICAL DIVISION OF DEXTER CHEMICAL CORPORATION, NEW YORK 59, N. Y.
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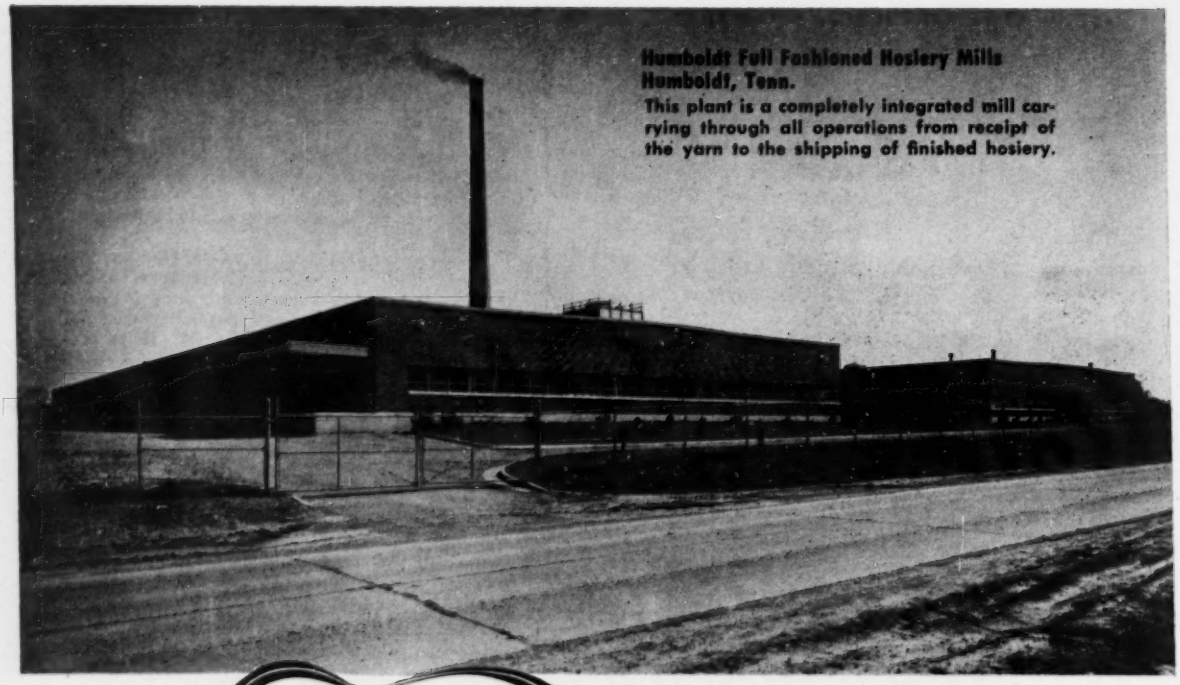

Humboldt Full Fashioned Hosiery Mills
Humboldt, Tenn.
This plant is a completely integrated mill carrying through all operations from receipt of the yarn to the shipping of finished hosiery.

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Projects
in
KNIT GOODS

Lockwood Greene has completed over 300 engagements in the Knit Goods field and has had over 4,000 engagements in the entire textile field.

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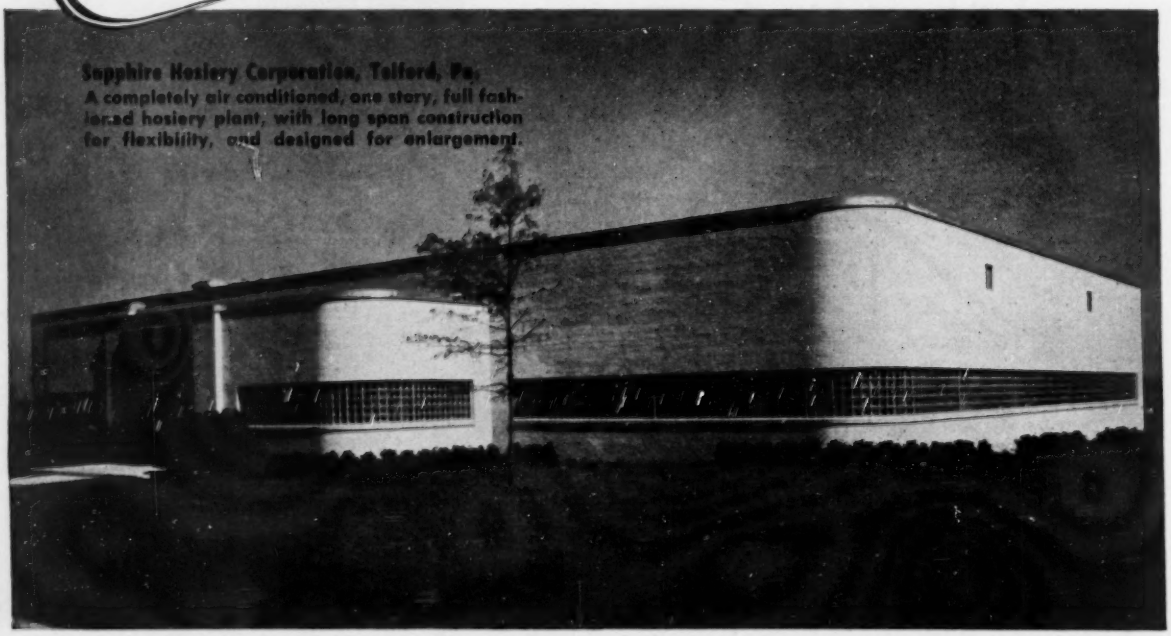

Sapphire Hosiery Corporation, Telford, Pa.
A completely air conditioned, one story, full fashioned hosiery plant, with long span construction for flexibility, and designed for enlargement.

The Entire Textile Industry is Talking About The REVOLUTIONARY sonoco PROCESS

Can be supplied with various surfaces — smooth, rough, flocked, scored, knurled. Ends can be colored for identification.

- DACRON TUBES
- BOBBINS
- TWISTER TUBES
- SPOOLER SLEEVES
- CHEESE CORES
- NYLON SIZING CORES
- LAP ROLLS
- PERFORATED DUROWELD TUBES
- and many other possible uses!

And there's good reason, too! DUROWELD by SONOCO, at last gives the industry a tough low cost, reusable carrier — capable of withstanding the high speed of today's modern equipment.

DUROWELD means we can now produce radically new and different carriers with micrometer tolerance and true balance.

Are you having carrier problems? DUROWELD may be the answer! Our sales and engineering departments would be happy to discuss the matter with you.

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PAPER CARRIERS
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Steam or Gas
HOT AIR
SLASHER
For High Speeds
At Low Costs
33 Years of Engineering Skill and Design by the World's Foremost Builder of Drying Equipment.
ROSS

Your New Slasher Should Have All These Important Features. Check and Compare! You Can't Top The ROSS REBEL DRYER.

1 **ACCESSIBILITY**—All rolls and bearings located out of dryer housing. Access doors to all parts.

2 **GREATER HOLDING CAPACITY**—Five passes hold over 27 linear yards of warp. Optional three pass for lighter warp hold over 17 linear yards.

3 **MAXIMUM PRODUCTION**—With larger holding capacity, higher temperatures, greater air circulation, maximum production can be expected varying from 800 to 1600 pounds of dry warp per hour.

4 **HIGH TEMPERATURES**—Controlled temperatures up to 600° F. allows high temperature set in (2) individually controlled zones to insure dryness before warp passes over first roll.

5 **MINIMUM EXHAUST**—Up to 95% recirculation for greater efficiency and fuel savings. Balanced air distribution with controlled volume to insure against warp rolling.

6 **MINIMUM FLOOR SPACE**—Dryer housing is approximately 16' long, 9'-10" wide, 11' high. Model available for 54", 60" and wider warps.

Write today for additional information on construction features and operating advantages.

J. O. ROSS ENGINEERING CORPORATION

NEW YORK 22—444 Madison Ave.
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Textile Machinery

Why let obsolete machines cost you money — in lost production, higher operating and maintenance expenses? Get the benefit of modern machines . . . without jeopardizing cash, capital position or borrowing power. Take your choice of two plans —

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EAGLE BRAND CORN STARCH IS SUPERIOR TO ROOT STARCHES IN THESE RESPECTS:

- **Greater Uniformity**
- **Always Available**
- **Has Greater Viscosity Stability**
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"A complete line of starches from the world's prime producer of starch products."

Today's slasher operation requires extremes in fluidities. Eagle Brand Corn Starch meets the most exacting of these demands. Eagle Starch is an acid-converted, thin boiling starch, available in all fluidities. Since all viscosities are obtainable, Eagle Brand Corn Starch enables the mill to meet its concentration needs precisely. Eagle Starch makes a smoother, tougher size that contributes to higher loom efficiency.

• ***Technical*** mill and laboratory assistance is yours without obligation. We welcome an opportunity to help you solve your specific production problems. Write us.

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ARE SUPERIOR TO STANDARD MACHINES BECAUSE OF:

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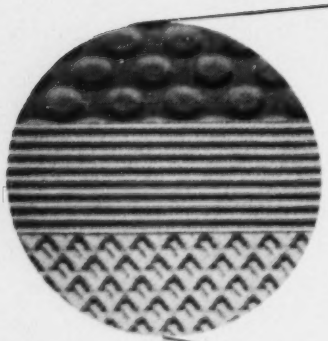
Sole Agents in the United States: TEXTILE MACHINERY IMPORT CO., Inc.
277 North Ave., New Rochelle, N. Y.



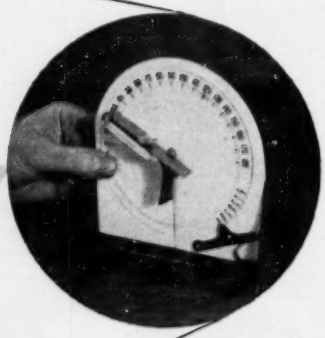
Shortcut to profitable embossing...

Monsanto's THREE-POINT SERVICE

1. *The right resin* for your embossed effects and crease-resistant applications. Melamine or modified urea . . . plus a series of three "AC" catalysts to meet your exact curing requirements.

MONSANTO

SERVING INDUSTRY . . WHICH SERVES MANKIND



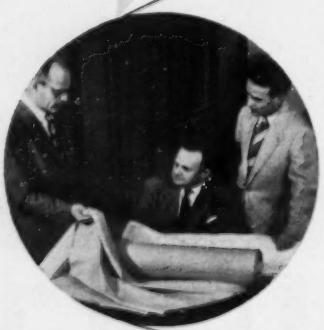
2. *Complete evaluation and development* facilities . . . including the *first* lab-scale embossing machine. Shown here—Monsanto's wrinkle meter measures crush resistance.

The secret of success in any embossing operation can be stated very simply—use the *right resin* in the *right way*. And to help you do just that—as quickly, easily and profitably as possible—Monsanto has made its Three-Point Service available.

As a pioneer in this field, Monsanto combines a wealth of application experience with highly advanced resin technology . . . newest example of which is Resloom E-50, a modified urea resin with marked advantages in deep embossed, Schreiner and glazed applications.

To get full information on Monsanto's broad line of thermosetting resins . . . and to enlist the expert assistance of Monsanto's trained sales and technical personnel . . . all you need to do is call, wire or write MONSANTO CHEMICAL COMPANY, Springfield 2, Mass.

Resloom: Reg. U. S. Pat. Off.

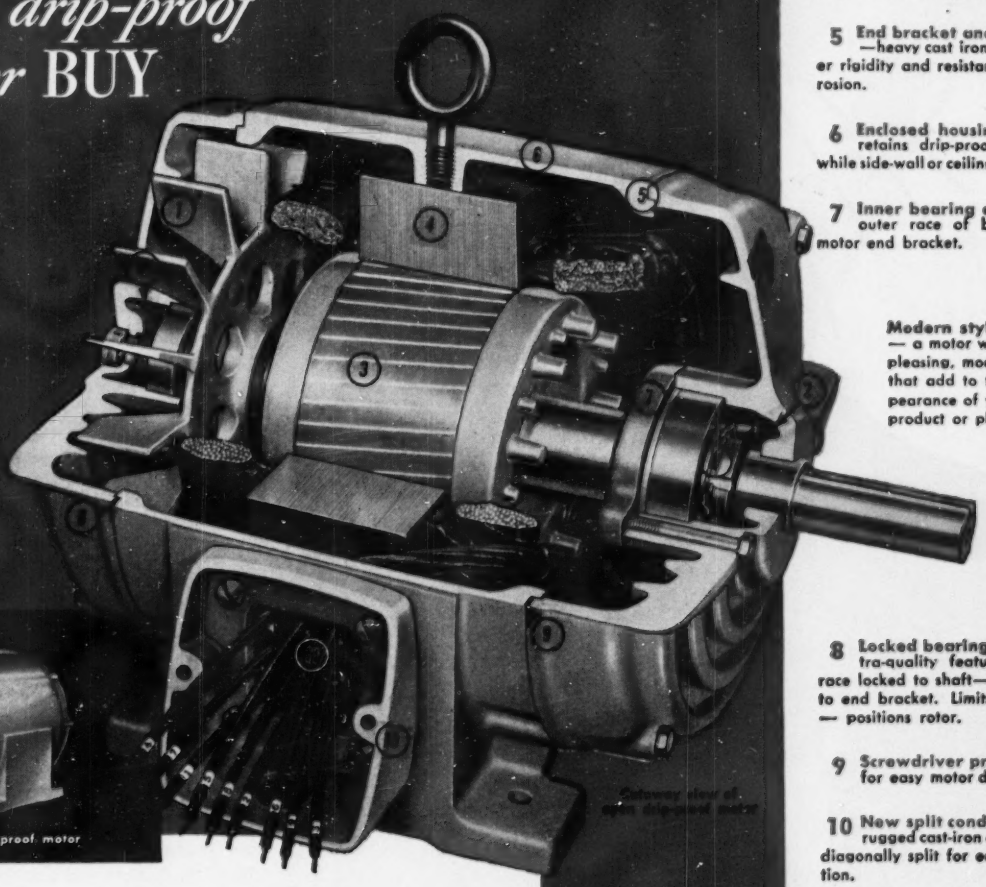


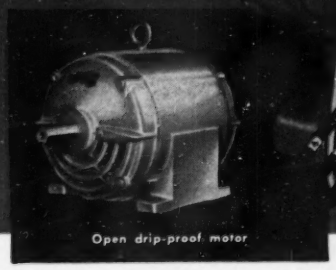
3. *Experienced technical personnel.* Monsanto people, both in the field and in the laboratory, have had years of specialized practical experience.

Here's the inside story of the

NEW L.A. *Line*

...your BEST *open drip-proof motor* BUY





Open drip-proof motor

1 Fan — efficient, non-sparking fan. New aerodynamic design for more effective cooling.

2 Large grease chamber — factory lubricated for years of attention-free service.

3 Indestructible cast-aluminum rotor — dynamically balanced with fan for smooth, quiet operation.

4 Stator — prewound stator core utilizes Formvar wire insulated with a new Alkyd Asphalt Resin insulating varnish.

5 End bracket and housing —heavy cast iron for greater rigidity and resistance to corrosion.

6 Enclosed housing—motor retains drip-proof features while side-wall or ceiling mounted.

7 Inner bearing cap—locks outer race of bearing to motor end bracket.

Modern styling — a motor with pleasing, modern lines that add to the appearance of your product or plant.

8 Locked bearing — an extra-quality feature. Inner race locked to shaft—outer race to end bracket. Limits end play — positions rotor.

9 Screwdriver pry slots — for easy motor disassembly.

10 New split conduit box — rugged cast-iron conduit box diagonally split for easy connection.

11 Lead identification — permanent, positive lead identification spacer in conduit box plus lead tagging.

Here is the new L.A. open drip-proof motor. It's completely redesigned inside and out to meet new NEMA standards. You get the advantages of Louis Allis's 52 years of motor building experience.

This motor is better protected, more drip-proof . . . has new bearing construction and improved insulation. Learn about these and the many other features of the new L.A. Line. Call your nearby Louis Allis Sales Engineer for information on this and our complete motor line.

THE LOUIS ALLIS CO.
MILWAUKEE 7, WISCONSIN

LA-104

NEMA D-flange motor

Vertical NEMA C-flange motor

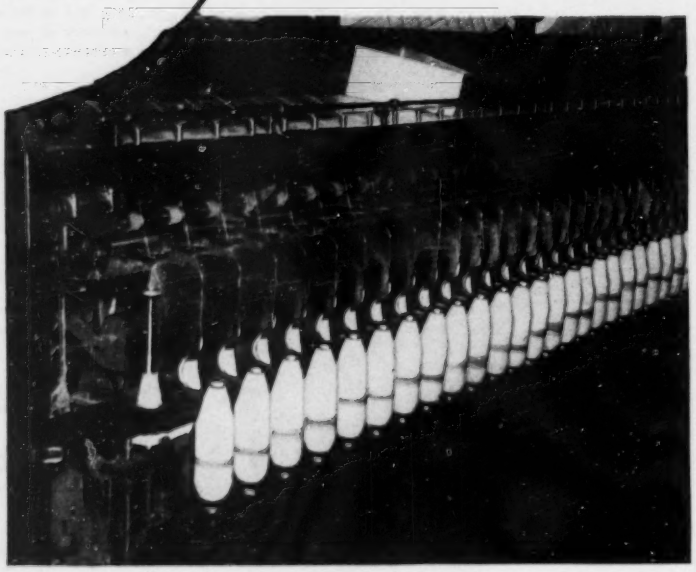
We specialize in SPECIAL MOTORS *and* PROMPT DELIVERY, TOO

There's a Louis Allis special motor that does your toughest jobs better. Whatever electrical or mechanical modifications you need, check Louis Allis first.

NEMA C-flange motor

These BUILT-IN Brass Bushings

ASSURE YOU OF TRUE, FREE RUNNING BOBBINS



Even at high speeds, Vermont bobbins, because of their unique built-in bushings, will not drag . . . will not pull! As an added preventative, the core of each bobbin is reamed so that if there is even the slightest degree of swelling, the bobbin will never grab the spindle—the bushing is always free running. Every Vermont bobbin is given a 7-day baked enamel cure which seals it from moisture, prevents swelling, and assures an always-smooth running surface for the fabric. Keep your PRODUCTION HIGH . . . keep your replacements COSTS LOW . . . with VERMONT spools and bobbins, made to your specifications!

VERMONT SPOOLS AND BOBBINS KEEP PRODUCTION HIGH

Contact your nearest VERMONT SPOOL & BOBBIN representative. He can explain to you how easily and inexpensively you can have your specific needs filled to order . . . to your exact requirements.

5 Features You Want

- Longer Life
- True, Free-Running
- Brass Bushings
- Skilled Workmanship
- Competitive Price

Represented in the East by Atkinson, Haserick & Co., Boston 6, Mass., and Watson & Desmond, P. O. Box 1954, Charlotte, N. C.

Vermont SPOOL AND BOBBIN CO.

234 SO. CHAMPLAIN ST. — BURLINGTON, VERMONT — *SUPERIOR SPOOLS AND BOBBINS SINCE 1906*

HEAVIER and HUSKIER the Southern

DURAWELD SHUTTLE

. . . has been used successfully for years by leading mills everywhere and is no longer considered experimental.

Its added and consistent weight provides a shuttle 10% heavier than the usual dogwood or fibre covered shuttle, thus reducing "Throwing out" and the consequent breakage due to this action.

Duraweld . . . is Southern's trade name for shuttles made with dogwood centers having one or two sides of *Stehide* or *Compreg*. The two materials become an inseparable unit through an unusual action of molecular adhesion.

Stehide . . . is Southern's trade name for high density phenolic impregnated cloth laminate.

Compreg . . . is Southern's trade name for high density impregnated wood laminate. The Duraweld construction is applicable to all types of shuttles and provides—

Greatly strengthened side walls . . . Elimination of wood defects . . . Will not heat up . . . Use of less loom power due to greater weight . . . Resists splitting . . . Moisture proof in side walls. All of these plus many more advantages make the cost of Duraweld less over a period of time.

Consult your nearest Southern Shuttle Field Engineer for the information you require.

SOUTHERN SHUTTLES

A DIVISION OF **STEEL HEDDLE MFG. CO.**

PARIS, GREENVILLE, S. C.

It's Southern for Service and Delivery

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TRADE MARK REG.

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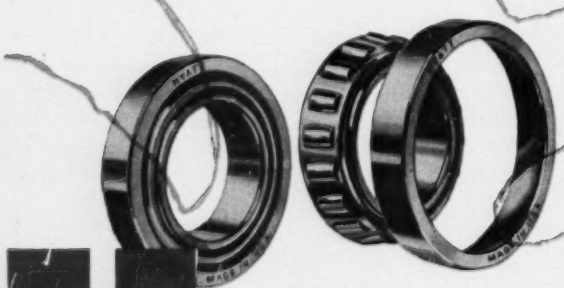
Always within easy reach . .

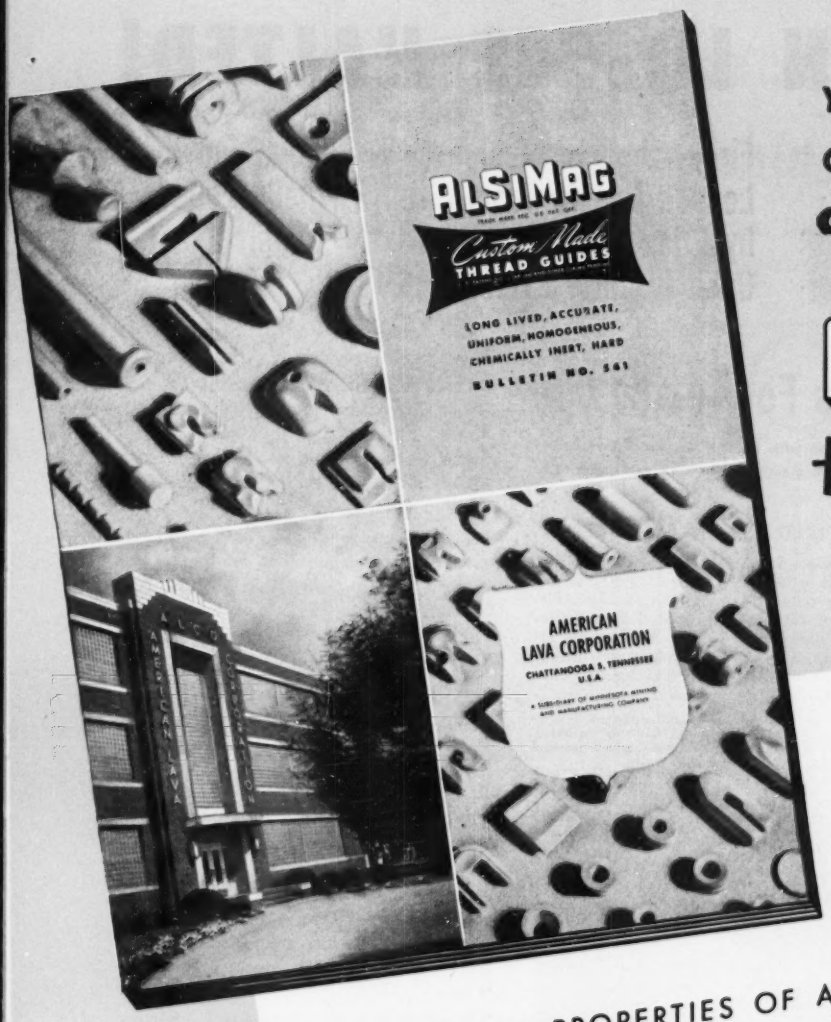
Hyatt's New Line of Dual-Purpose, Self-Aligning BARREL BEARINGS!



Got a bearing problem? Just reach for Hyatt's new Barrel Bearing Catalog! This is one catalog engineers have been waiting for, because it's essentially *a guide to lower maintenance costs!* Barrel Bearings are not only dual-purpose in design; they're also *self-aligning*. They operate with full efficiency under misalignment conditions which cause excessive wear in ordinary bearings. If *your* job involves bearing specifications, make sure you have Hyatt Catalog No. B-154. It puts a complete line of Barrel Bearings right at your finger tips. Write to Hyatt Bearings Division, General Motors Corporation, Harrison, New Jersey.

HYATT

STRAIGHT BARREL TAPER



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ALSIMAG® thread guide catalog

28 PAGES OF EASY-TO-USE THREAD GUIDE INFORMATION INCLUDING:

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53RD YEAR OF CERAMIC LEADERSHIP

AMERICAN LAVA CORPORATION

CHATTANOOGA 5, TENNESSEE

A SUBSIDIARY OF MINNESOTA MINING AND MANUFACTURING COMPANY

SALES ENGINEERS: NORTH AND EAST: Jay S. Gosnell, 671 Broad St., Newark, New Jersey, Mitchell 2-8159. SOUTHEAST: Joe E. Spearman, American Lava Corporation, Chattanooga 5, Tenn., 5-3411 ALL OTHER AREAS: J. B. Shacklett, American Lava Corporation, Chattanooga 5, Tenn., 5-3411 CANADIAN REPRESENTATIVE: Ian M. Haldane and Company, Post Office Box 54, London, Ontario, Canada CONTINENTAL EUROPEAN REPRESENTATIVE: P. C. Huguenin Luzern, Gerbergasse 6, Luzern, Switzerland.

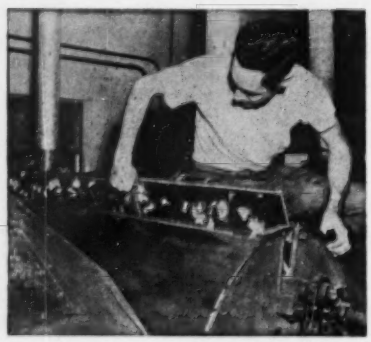
TRAMP IRON LOSSES HALTED!

Fire, Damaged Machinery & Goods, Man Hour Losses Due to Tramp Iron, Virtually Ended by Eriez Magnets Say Textile People. Case Histories Tell the Story!

During a 30-day period an Eriez Permanent (non-electric) Magnet removed these 1,045 pieces of tramp iron, ranging from minute particles to large pieces!

Eriez Magnetic Separators For Textile Use

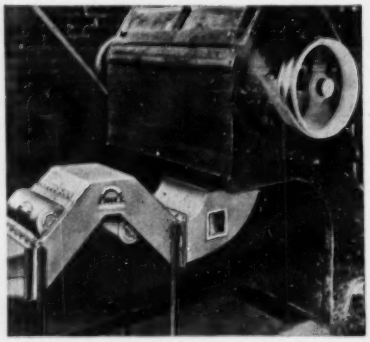
Typical examples of the variety of Eriez application coupled with sound "magnetic" installation engineering to solve tramp iron problem in cotton mills, waste plants, woolen mills and rayon rolls.



SPIKED APRON MAGNETS

The Eriez Spiked Apron Magnet was designed to meet the need of the textile industry in removing tramp iron while processing wool, cotton, rayon or sisal. Installation and maintenance is simple. Many mills report practically total elimination of damage to costly card and garnett clothing and stoppage of picking room fires.

Eriez 58" Spiked Apron Magnet removes 3 to 4 pounds of tramp iron each day from cotton being processed in this mill. No maintenance except simple cleaning. No operating costs.



PNEUMATIC LINE ASSEMBLY (HUMP)

In pneumatic lines the Eriez Magnetic Hump provides tramp iron protection by catching stray metal with two powerful ATOMagnets, one on each side of a flow-interrupting unit, giving *double* protection. Available for air lines from 2¾" to 20". Any shaped pipe or outlet can be converted to the Eriez Magnetic Hump's rectangular opening.

Vertical Hump installed between bale breaker and vertical opener creates a tumbling action which slows down and breaks up the flow of material allowing powerful ATOMagnets to remove tramp iron.

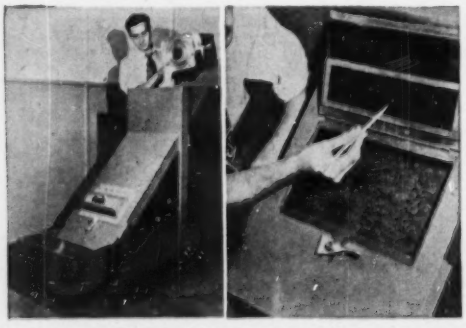


PLATE ATOMagnets

Eriez Plate Magnets are easily installed over or under chutes, belts or, as illustrated, on hoppers. The flat-faced magnet is made up of a series of powerful, stable, Alnico V castings, mounted on magnetic steel plates, surrounded by a non-magnetic installation strip. Plate ATOMagnets are available in any size for a variety of applications.

Plate ATOMagnets, mounted on top and beneath wooden chute, remove metal chips from raw virgin nylon being poured into hopper.

Operator points to typical tramp metal chip which came from the can of powder. In this mill about 75 chips are removed each week.

"Fire damage eliminated," says a mill in New England.

"Three years since the company has suffered machinery damage," reports a South Carolina textile manufacturer. *"We can hardly put a dollar valuation on the amount of money saved since installing Eriez magnets."*

"Our Eriez magnets are instrumental in saving approximately 250 man hours annually in addition to preventing machinery damage and shutdown," says a manufacturer in Georgia.

No wonder that 9 out of 10 textile mills specify Eriez!

Eriez Permanent Magnetic Separators are non-electric. They are not dependent on electric current or on maintenance—the first cost is the last cost.

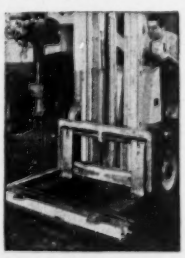
Eriez units contain high-strength Alnico V . . . the power that simply and efficiently removes spark-causing iron and steel from wet or dry fibers . . . cotton, wool, rayon, floss silk, flax, hemp, asbestos, flax tow, jute, feathers, furs, hair, sisal, kapok, excelsior and all kinds of waste.

Thanks to the flexible designs and sizes of Eriez magnet installations, dangerous tramp iron can be prevented from entering every type of textile processing machinery . . . openers, likerin rolls, beaters, garnett roll teeth, gin saws, wool and rayon cards.

ERIEZ MAGNETS

Super Sweeper Keeps Factory Aisles, Lots, etc. Free from Nails, Scraps

Eriez Magnetic Super Sweeper removes dangerous tramp iron from floors, parking lots, warehouses, etc. Four sizes in three magnetic strengths. Manual or mechanical operation . . . pull it, push it or suspend it. Write for Bulletin on this new versatile trouble saver.



Eriez Manufacturing Company, 72F Magnet Drive, Erie 6, Pa.
Send me Bulletin on Eriez Magnetic Separators for the Textile Industry ☐
Send me more information about the Eriez SUPER SWEEPER ☐

Name_____ Title_____

Company_____

Street and City_____

Here's How Du Pont's Exclusive Cloth Heater

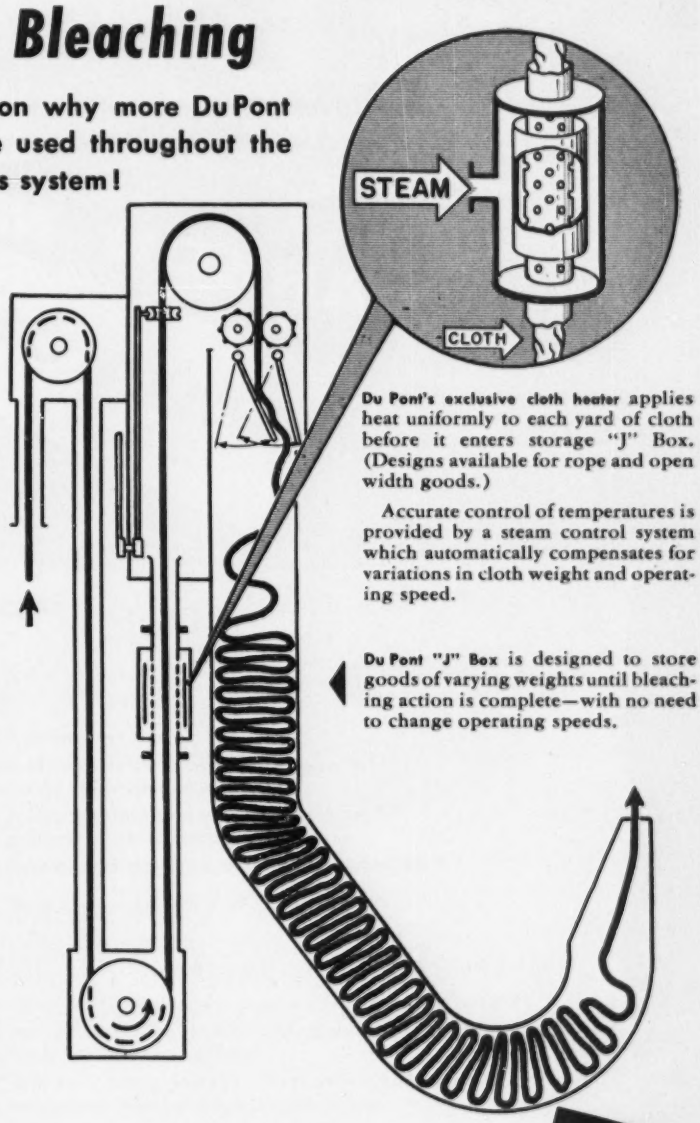
Assures Uniform Bleaching

This unique feature is one reason why more Du Pont Peroxide Bleaching Systems are used throughout the world than any other continuous system!

You are assured uniform bleaching—independent of cloth weight or operating speed—because Du Pont's exclusive cloth heater is designed to heat each yard of cloth *before* it moves into the storage "J" Box. Uniform heating, of course, means uniform bleaching and dyeing.

After the cloth is heated to just the right bleaching temperature, it moves into the "J" Box, which is especially designed to hold goods of varying bulk. In this way, you get the flexibility of running either light or heavy goods without changing operating speed. And you can be sure that all goods remain in storage long enough to complete the bleaching action.

LET DU PONT SHOW YOU how its peroxide bleaching processes and specialized services can help you. For more information, call your Du Pont representative or send in the coupon below.



Du Pont's exclusive cloth heater applies heat uniformly to each yard of cloth before it enters storage "J" Box. (Designs available for rope and open width goods.)

Accurate control of temperatures is provided by a steam control system which automatically compensates for variations in cloth weight and operating speed.

Du Pont "J" Box is designed to store goods of varying weights until bleaching action is complete—with no need to change operating speeds.

FOR MORE INFORMATION MAIL THE COUPON BELOW

DUPONT PEROXIDES FOR BLEACHING

ALBONE®

"ALBONE" 35.....hydrogen peroxide 35%
"ALBONE" 50.....hydrogen peroxide 50%

DU PONT
REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

E. I. du Pont de Nemours & Co. (Inc.) TI-64
Electrochemicals Department, Wilmington 98, Del.

☐ Please send me your reference book on "Albone" hydrogen peroxide.

☐ Please send me more information about your processes and services. I am bleaching _____

Name _____ *Position* _____

Firm _____

Address _____

City _____ *State* _____

® Varkon F P
(POWDER)

Effective against CALCIUM – MAGNESIUM – IRON and other heavy metals such as COPPER, ZINC, etc.

- Highly effective in preventing *iron stains*
- Prevents iron from interfering with the efficiency of the bleach in peroxide bleaching
- Improves efficiency and foaming characteristics of soap and synthetic detergents in scouring operations
- Assists in obtaining a much better strip of chrome dyed materials

® Varkon M
(LIQUID)

Particularly effective against CALCIUM and MAGNESIUM

- Used with soap in extremely hard water, it improves efficiency, increases foaming
- In dyeing (particularly woolens) Varkon M helps produce brighter and cleaner shades
- As an additive to textile printing gums, prevents "lake development due to presence of calcium or other impurities in the gums"

® Varkon F L
(LIQUID)

Developed for the specific purpose of CHELATING IRON and other heavy metals under strongly alkaline conditions

- Prevents stains caused by iron in kier-boiling of cotton goods
- Results in improved whiteness and bottoming of the material
- Also useful in mercerizing, to prevent iron stains

Write for Technical Service Bulletins

ARKANSAS CO., INC.
Serving the Textile Industry for over 50 Years
NEWARK, NEW JERSEY

"This solution satisfied the Safety Engineering Department..."

A leading carpet manufacturer in the Philadelphia area was faced with a serious problem — oil slick floors caused by lubricant leakage and throw-off. The Safety Engineering Department issued frequent warnings about dangerous conditions near the looms. Both conventional and special-purpose lubricants were tried but they either did not do a proper lubricating job or failed to stop the leakage.

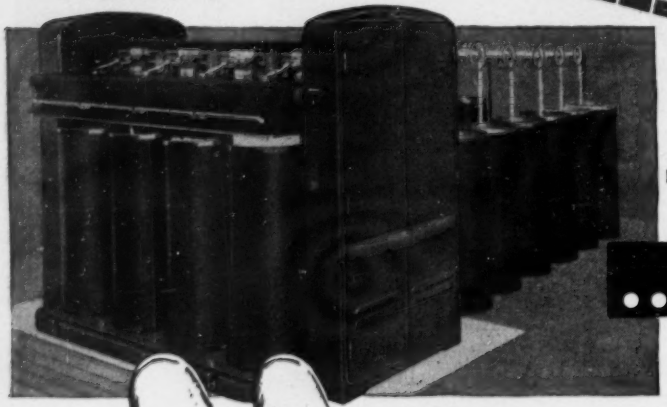
When Sinclair Lubrication Engineer Harry Donovan was called in, he spent several days observing operating conditions. "Then," he reports, " I recommended Sinclair NO DRIP. I reasoned that Sinclair NO-DRIP was the right oil for this job because it is a high quality lubricant *especially fortified with Sinclair-developed additives to eliminate leakage and throw-off*. A trial period proved this recommendation entirely solved the problem. Soiled, slippery floors were eliminated and oil consumption was cut. What's more, Sinclair NO-DRIP Oils' superior lubricating qualities decidedly lengthened bearing life."

SINCLAIR LUBRICANTS

Why not let a Sinclair Lubrication Engineer help solve *your* lubrication problem? *There's no obligation.* Contact your local Sinclair office or write Sinclair Refining Company, 600 Fifth Avenue, New York 20, N.Y.

Superflex Spinning Frame

Quik-Set Roving Frame



ROTO-DRAFTER

...BUT 3 BRAND NEW MACHINES

for the WHITIN American System

the only completely integrated unit—now available for processing worsted, synthetics and blends

Now for the first time all three machines necessary for the production of worsted, synthetic, or blended yarns on the American System are available from Whitin. The new and remarkably versatile WHITIN ROTO-DRAFTER processes top. The new WHITIN QUIK-SET Roving frame will accommodate worsted sliver weighing up to 120 grains and 100% synthetic sliver weighing up to 100 grains. The new Whitin American SUPERFLEX Spinning frame, like the QUIK-SET Roving frame, has top arm roll suspension and new weighting arrangements. A well matched trio of outstanding textile machines for quality production and profits . . . **the Whitin-American System Way!**

Complete descriptive literature on all of these machines is available.

Whitin MACHINE WORKS

WHITINSVILLE, MASSACHUSETTS

CHARLOTTE, N. C. • ATLANTA, GA. • SPARTANBURG, S. C. • DEXTER, ME.

Open Width Bleach— Cloth passes through an open width washer, caustic saturator, steamer, washer, peroxide saturator, steamer, washers and then over forty-nine Stainless Steel steam heated dry cans. All the equipment with the exception of the rubber rolls is Stainless Steel. Shown here are the Tensitrol Open Width Washers fabricated by Rodney Hunt Machine Co., Orange, Mass.

Open Width Mercerizer— Cloth is drawn from a box through two 3-roll padders, over a Mercerizing Tenter, through Stainless Steel Williams Units where all traces of caustic are neutralized and washed out and then is dried over forty-nine Stainless Steel steam drying cans. The two padders shown here each consist of three rolls and were built by the Morrison Machine Co., Paterson, N. J.

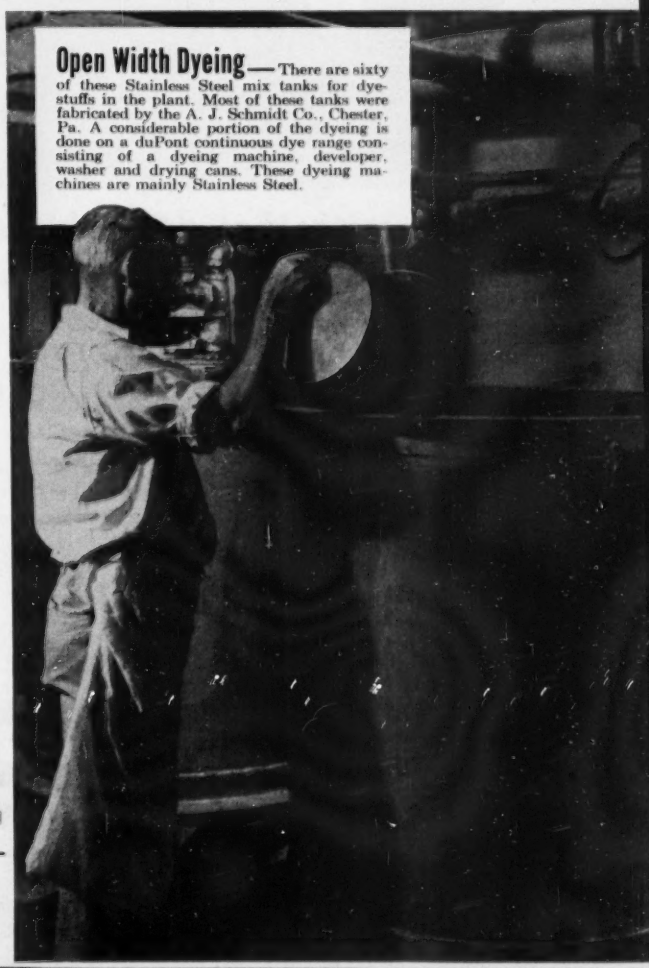
Stainless Steel prevents contamination at every step

WHEN you are finishing cloths in continuous lengths, the smallest stain can be an expensive proposition, for it means reprocessing an entire bolt. The most effective way to guard against contamination from rust, dye carry-over or other causes is with equipment made of Stainless Steel.

The 123-year-old firm of Joseph Bancroft and Sons Co., Wilmington, Del., takes full advantage of the ability of Stainless Steel to protect against contamination by using it extensively in bleaching, mercerizing and dyeing operations.

This firm has found that Stainless Steel's light, bright surface makes detection of foreign matter easy. Its superior corrosion resistance completely does away with the problem of rust from the equipment itself. Its dense, smooth surface does not retain dye from one color to the next. And its durability, with resulting savings in maintenance and replacement, makes it the most economical material in the long run.

Follow the lead of America's foremost textile plants and use Stainless Steel wherever its many advantages dictate. And when you do, be sure it is perfected, service-tested USS Stainless Steel. Then you know you'll get the finest performance.



Open Width Dyeing— There are sixty of these Stainless Steel mix tanks for dyestuffs in the plant. Most of these tanks were fabricated by the A. J. Schmidt Co., Chester, Pa. A considerable portion of the dyeing is done on a duPont continuous dye range consisting of a dyeing machine, developer, washer and drying cans. These dyeing machines are mainly Stainless Steel.

UNITED STATES STEEL CORPORATION, PITTSBURGH
AMERICAN STEEL & WIRE DIVISION, CLEVELAND
COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO
NATIONAL TUBE DIVISION, PITTSBURGH
TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA.
UNITED STATES STEEL SUPPLY DIVISION, WAREHOUSE DISTRIBUTORS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

USS STAINLESS STEEL

USS

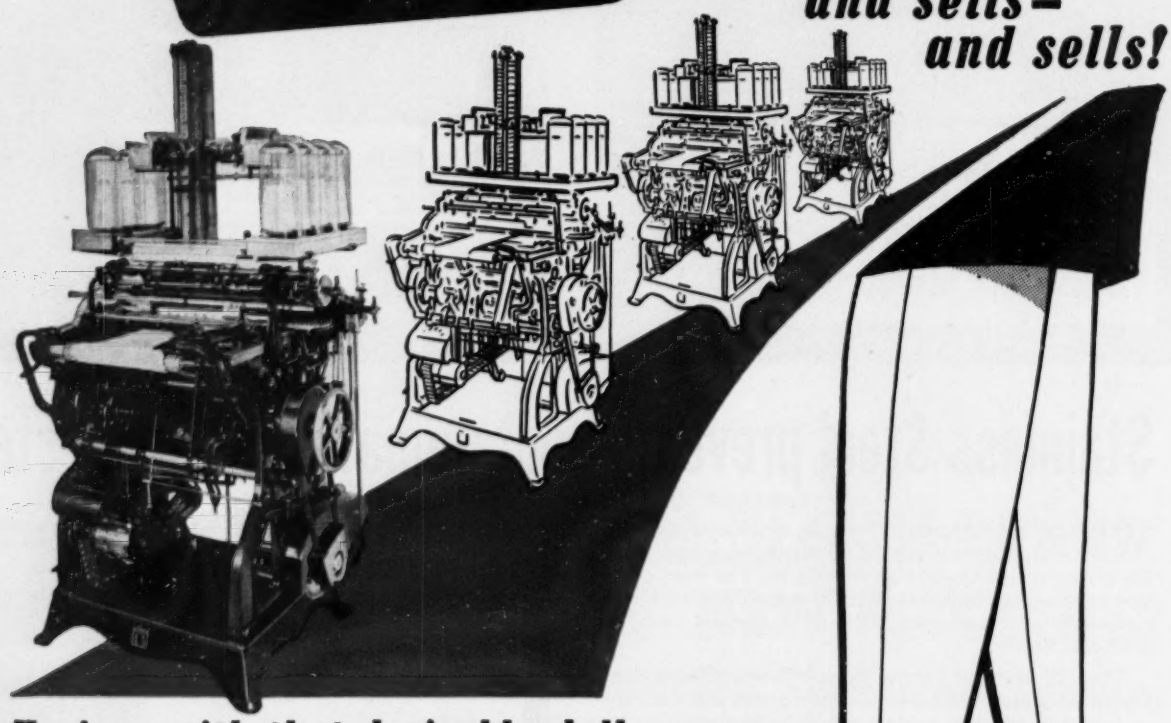
SHEETS · STRIP · PLATES BARS · BILLETS
PIPE · TUBES · WIRE · SPECIAL SECTIONS

4-1016

UNITED STATES STEEL

LINE UP FOR TOP PROFITS in the High Gauge Quality Market!

HOSIERY *that sells— and sells— and sells!*



Hosiery with that desirably dull luxurious look!

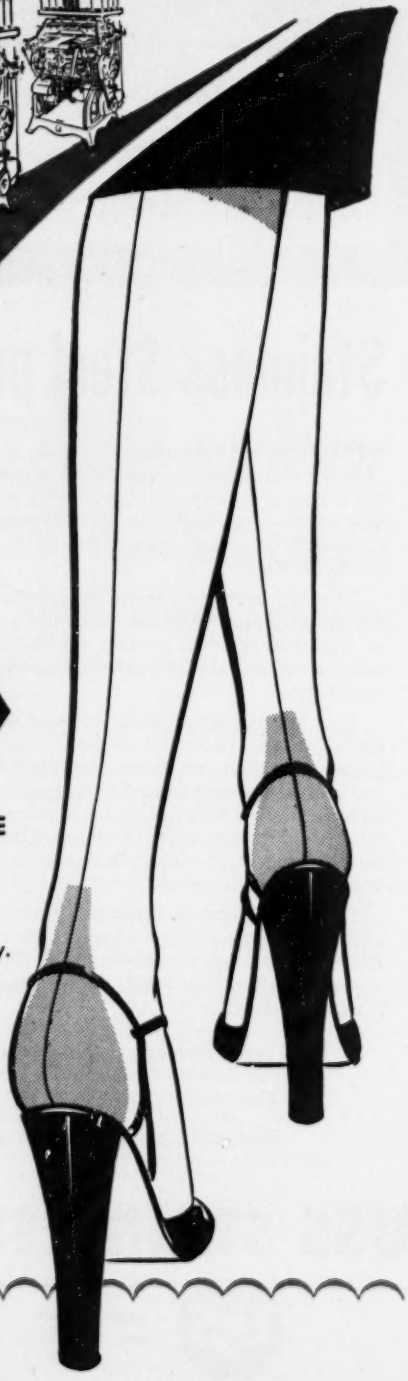
THE WILDMAN 75 GAUGE FULL FASHIONED HOSIERY MACHINE

Tempt the consumer to buy top-gauge hosiery — often.

But be sure you give her the highest quality and performance in the hosiery she demands, so she will specify your brand — again and again.

The WILDMAN 75 is your basic production unit to keep her sold on your hosiery. As always, this machine is a high production, efficient, economical, automatic-in-operation unit. In the special production of high-gauge hosiery, this means you will be selling elasticity and durability in 75 gauge hosiery that will remain constant — in pair, after pair, after pair.

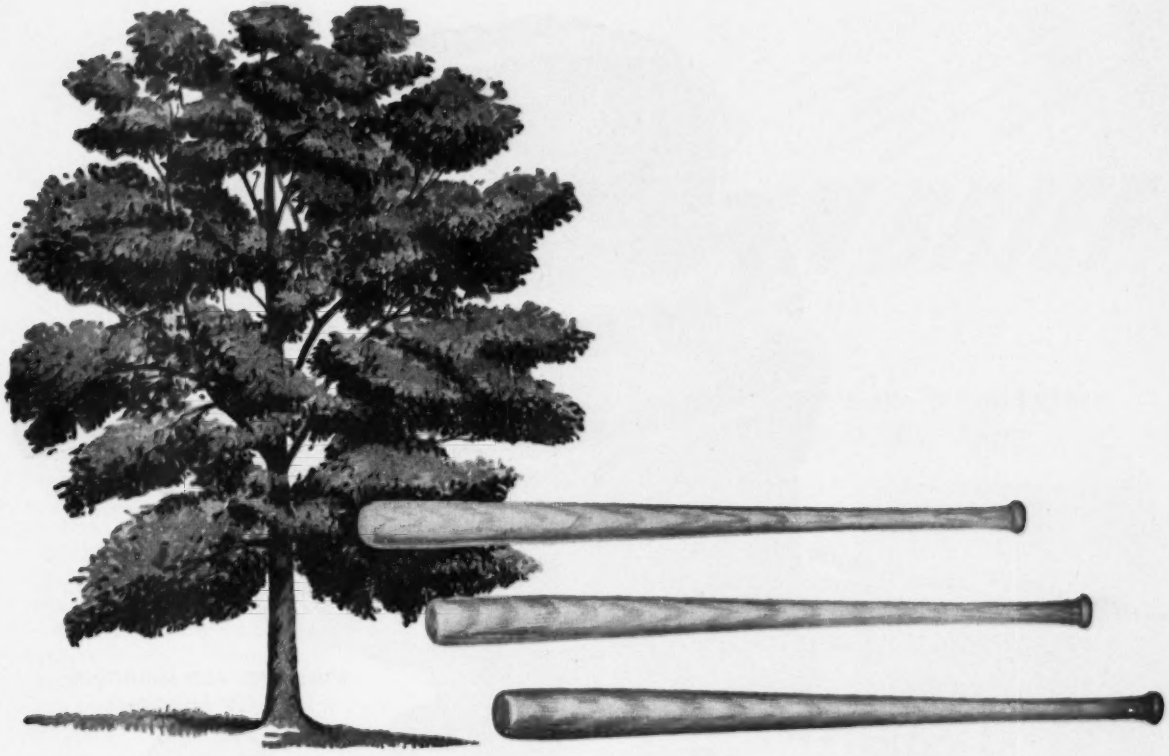
HOSIERY that sells and sells and sells — there's your profit picture, when you use the WILDMAN 75 . . . Inquire today for complete details.

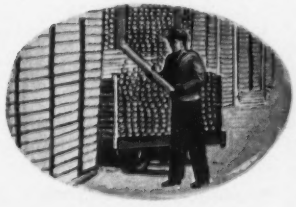


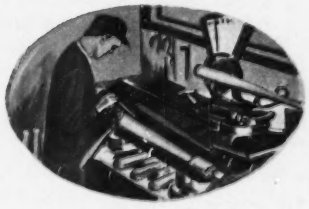
WILDMAN

MFG. CO., NORRISTOWN, PA.

MANUFACTURERS OF: FULL FASHIONED HOSIERY MACHINES; CIRCULAR MACHINES FOR OUTERWEAR, UNDERWEAR, SPORTSWEAR, TRIMMINGS: STOP MOTIONS







Home runs start here

HOME RUNS START . . . *where?*

In the ball-park? More likely in the forest, for the finest bats need tough, straight-grained ash. Add time for aging. Skill in shaping. *Result:* a bat with a game-winning "finish."

In bleaching and dyeing operations also, fine finishes don't "just happen." They, too, take planning . . . take skill . . . take a de-sizing agent you can rely upon . . . take *Diastafor.*

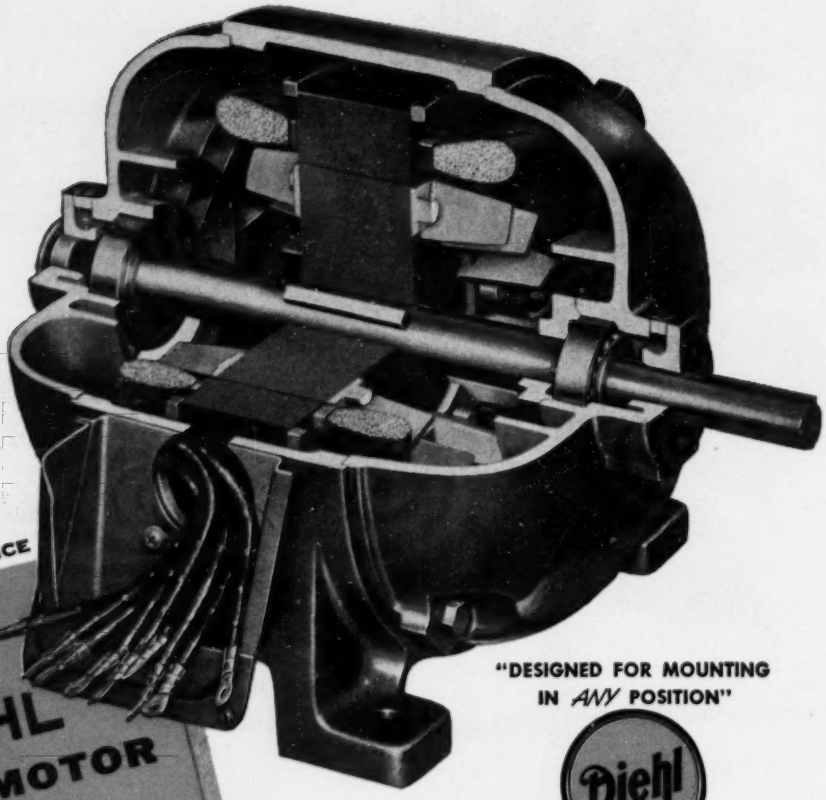
Diastafor de-sizing agent is worth cheering about. No matter what your working conditions—with various lots . . . with variations in water and sizing formulas . . . with cottons, rayons or mixed goods—you will find Diastafor a champion every time.

For Diastafor *works.* It works in an unusually wide range of temperatures and pH, a range sure to satisfy your every enzyme de-sizing requirement. It works in either the continuous or batch process. It works with ease, speed and economy. Remember: *it has worked as a winner for over 44 years!*

Diastafor is available in 3 types: L, L_2 and D. For further information about these, or for any other questions you may have, please write us. Standard Brands Incorporated, *Diastafor Department*, 595 Madison Avenue, New York 22, N. Y.

DIASTAFOR

A TRADE MARK OF STANDARD BRANDS INCORPORATED



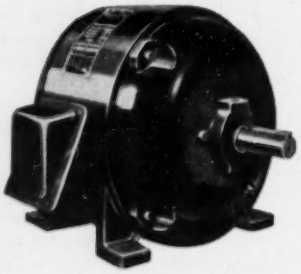
TOPS IN QUALITY
COMPETITIVE IN PRICE

SPECIFY THE New DIEHL TYPE "D" MOTOR

"DESIGNED FOR MOUNTING IN *ANY* POSITION"

Diehl

...here's 12 reasons why



- Most Advanced Slot Insulation
- Machine Fitted Stator
- Rotor Keyed to Shaft
- New High Dielectric Insulated Stator Windings
- Permanently Numbered Leads
- Conduit Box, An Electrician's Delight
- Centrifugally Cast, High Density Rotor Windings
- Rugged Stress-Relieved End-Covers
- New Pre-lubricated Heavy Duty Ball Bearings
- Locked-in Ball Bearing
- Dual Ventilation System
- Extra Strong Cast Iron Frame

Designed and engineered for more efficient performance. Smaller in size, lighter in weight and quieter in operation.

Consult our engineers before writing your specifications and get the benefit of 68 years of experience in the design and manufacture of general and special purpose motors

Diehl motors will still be available in old NEMA Standard frame sizes for interchange and replacement.

DIEHL MANUFACTURING COMPANY
Electrical Division of THE SINGER MANUFACTURING COMPANY
Finderne Plant, SOMERVILLE, N. J.

Please send me the following bulletins

☐ New Type "D" Motor Bulletin No. TI-3304
☐ Consolidated Catalog & Price List No. TI-3310

Name_____
Company_____
Street_____
City_____ State_____

INTEGRAL AND FRACTIONAL HORSEPOWER MOTORS ARE AVAILABLE IN A WIDE RANGE OF TYPES AND SIZES

Textile Industries
for June, 1954

News IN BRIEF

Mill Mergers to Help Hosiery Business. The lack of emphasis on style, the trend towards the wearing of fewer clothes, and a lack of price leadership was pointed out by Dan May, May Hosiery Co., as basic reasons for poor business conditions in the men's hosiery industry.

Mr. May's remarks, delivered extemporaneously during the 17th Hosiery Industry Conference, were directed towards the need for a reduction in the number of producing units in the industry. Some of this, he stated, has already come about through liquidations, but he proposed mergers as a constructive answer to the problem.

Between the Devil and the Deep. Restrictions imposed by many foreign countries on imports of American cotton textiles, together with competition from mills in low-wage countries, are posing serious handicaps to the United States textile industry, industry representatives told the Department of Commerce. The industry's dilemma is that it must have protection from imports from countries with substandard wage scales, while at the same time remaining free to develop markets anywhere in the world.

Increased Cotton Utilization Research. Agriculture Department's budget request includes appropriation of $1,385,000 for cotton utilization research, up $180,000 over estimated 1954 expenditures. Noting deep inroads made by rayon in tire cord market, Dr. G. E. Hilbert, USDA's director of utilization research, said that increased appropriation would be used to intensify research in field of canvas, tenting, and tarpaulins, where cotton is meeting increased competition from rayon and other man-made fibers.

Definition of "Yield." The Warp Knit Manufacturers Group of the National Federation of Textiles stressed at its annual meeting that, in referring to warp knit fabrics, the term "yield" refers to grey goods only, and that the word "weight" should be used in conjunction with finished goods.

Community Relations Aid. A Community Relations Suggestion Kit has been prepared by and is available from the Textile Information Service, 551 Fifth Ave., New York 17, N. Y. The kit contains sample news stories, speech and booklet outlines, sample materials and recommended actions that can be adapted by individual mills in community relations efforts.

Permeable Printing Rollers. A roller printing machine which uses permeable cylinders instead of engraved copper rollers is the subject of British Patent 703-887 granted to A. J. C. de Oliveira Barros of Lisbon, Portugal. Color is internally fed to the printing rollers, which may be formed of gauze on which the pattern is reproduced in permeable areas by a photochemical or other method. Accord-

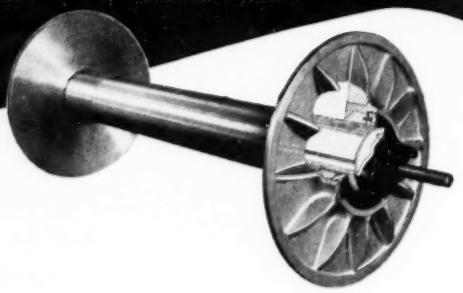
First Shipment of Raw Wool Enters Charleston, S. C., Port

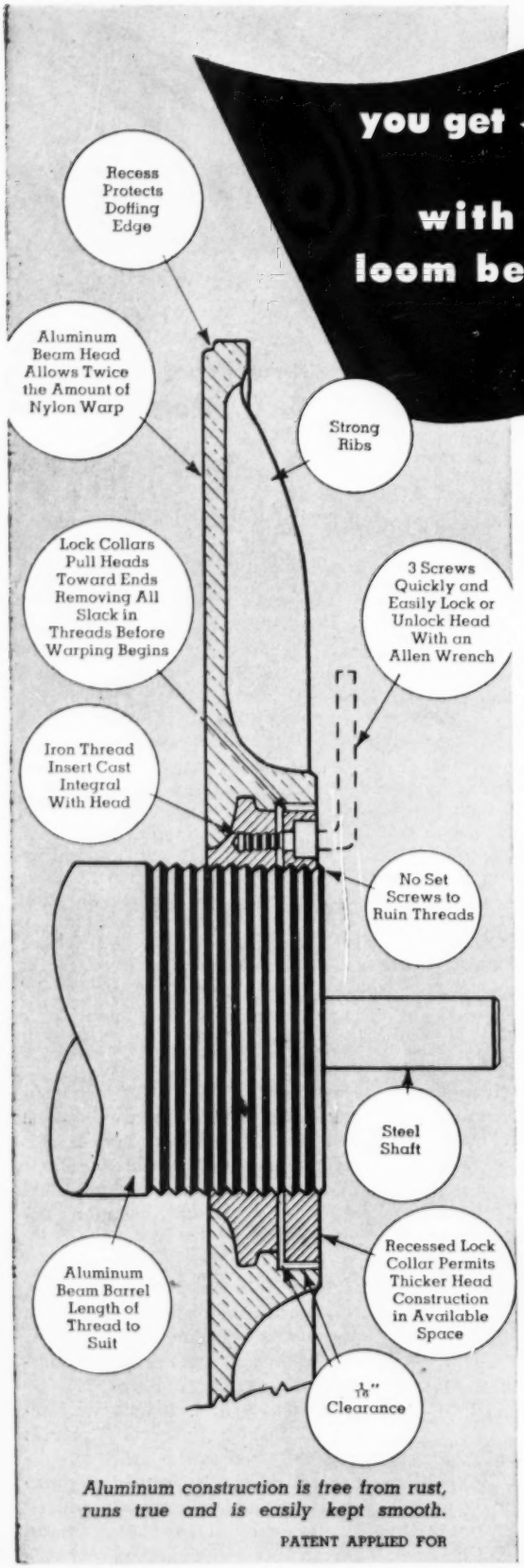
Arrival of the first shipment of raw wool into the Port of Charleston, consigned to one of the two multi-million-dollar wool processing plants now planned for South Carolina, was heralded recently by officials in a reception aboard the S. S. *Robin Kirk*, which brought 60 tons of the wool from South Africa.

Above, a bale is examined by L. W. Bishop (right), director of the State Development Board, and Arthur O. Wellman (third from left), president of Nichols & Company, Boston, which is building a $3,000,000 plant at Johnsonville, S. C. Looking on are James J. Lamb, vice-president of the Robin Line, shippers, and Walter H. Robinson, Jr., named manager of the new plant, which will be known as the Wellman Combing Company. Among others witnessing the arrival of the wool were Roger Milliken, president of Deering, Milliken Co., who said "the establishment of the Wellman Combing Co. plant at Johnsonville, first in the South, undoubtedly is the 'trigger' which will launch an industrywide movement of woolen plants into the South."

you get { 1. Quick, easy adjustment
2. Greater head strength
3. The utmost simplicity

with *HAYES* adjustable loom beam head locking device




Recess Protects Doffing Edge
Aluminum Beam Head Allows Twice the Amount of Nylon Warp
Strong Ribs
Lock Collars Pull Heads Toward Ends Removing All Slack in Threads Before Warping Begins
3 Screws Quickly and Easily Lock or Unlock Head With an Allen Wrench
Iron Thread Insert Cast Integral With Head
No Set Screws to Ruin Threads
Steel Shaft
Recessed Lock Collar Permits Thicker Head Construction in Available Space
Aluminum Beam Barrel Length of Thread to Suit
1/16" Clearance

Aluminum construction is free from rust, runs true and is easily kept smooth.

PATENT APPLIED FOR

The new Hayes adjustable beam head locking device (pat. applied for) is a marvel of **practical** simplicity. Three screws easily and quickly lock or unlock the head with an ordinary Allen wrench. No special tools are required and in addition to its simplified design the new Hayes locking device is strong and sturdy in construction and stays put, once properly locked in place.

Hayes long experience in machining and manufacturing light weight metal beams has resulted in a light weight, adjustable loom beam that gives you greater head strength, increased rigidity and a permanent running balance that stays true indefinitely. The glass-smooth surfaces of course, do not rust, and require no painting or maintenance expense. Hayes produces adjustable loom beams for all standard looms. Write today for complete information on Hayes Beams.

The World's Largest Producer of Light Metal Beams

HAYES INDUSTRIES, INC.

Home Office: Jackson, Michigan

EASTERN REPRESENTATIVE:
J. Paul Laird
Philadelphia, Pennsylvania

SOUTHERN REPRESENTATIVE:
R. E. L. Holt Jr. & Associates
Greensboro, No. Carolina

NEW ENGLAND REPRESENTATIVE:
J. S. Fallow & Co.
New Bedford, Mass.

CANADIAN REPRESENTATIVE:
J. S. Fallow & Co.
Montreal, Canada

ing to the patentee, this method overcomes the pattern size restriction of conventional rollers, which is limited by the weight of the copper cylinders. The method is similar in principle to that of screen printing on a flat surface.

Helanca Welts for Hosiery. Helanca welts on fine gauge, 15-denier hosiery have been introduced by a Pennsylvania hosiery mill. Claimed to permit each stitch to stretch to several times its original length either way, the Helanca yarn welt bears the strain when the stocking is expanded, and permits it to conform to the shape of the leg.

Ray of Sunshine. "I think the future of the (textile) industry is brighter than it has ever been in any period of our development." —R. H. Jewell, retiring president, Cotton Manufacturers Association of Georgia.

Quicker Write-Off for Textile Machinery Asked. A machinery replacement tax policy at least on a par with tax programs of foreign countries whose industries were built up with Marshall Plan dollars, and against whom American manufacturers must now compete, was urged on Congress by Roger Milliken, textile executive and a director of ACMI. American firms must take an average of 16-2/3 years to depreciate machinery, while foreign businesses have been permitted to charge off the entire cost in from one to five years.

Increased Fiber Consumption Ahead. A per capita increase in consumption of all textile fibers from the current annual rate of 36 pounds to a rate of 47 pounds by 1976 is predicted by Willard C. Wheeler of the advertising firm of Anderson & Cairns, Inc. Mr. Wheeler bases his prediction on a study of the general economic cycle and of the growth of fiber consumption from 1920 to the present.

Suit Dropped. The government has dropped its five-year-old civil anti-trust suit against Celanese Corp. of America, in which it charged that the company's merger with Tubize Rayon Corp. was in restraint of trade in the manufacture and sale of acetate and rayon warp-knit fabrics. Celanese accepted a decree requiring that the company divest itself of the warp-knitting machines it acquired in the merger with Tubize. Celanese states that it had already disposed of the machines.

New Date for ASQC Meet. The annual meeting of the Textile Division, American Society for Quality Control, will be held on January 27, 28, and 29, 1955. Meeting place will be Clemson College, Clemson, S. C.

Blanket Production Up. Production of all-wool civilian bed blankets increased 40 per cent from 1952 to 1953, while that of part wool declined 2 per cent, according to The Wool Bureau. All-wool blankets accounted for 21 per cent of total production of civilian bed blankets, and part wool for 38 per cent.

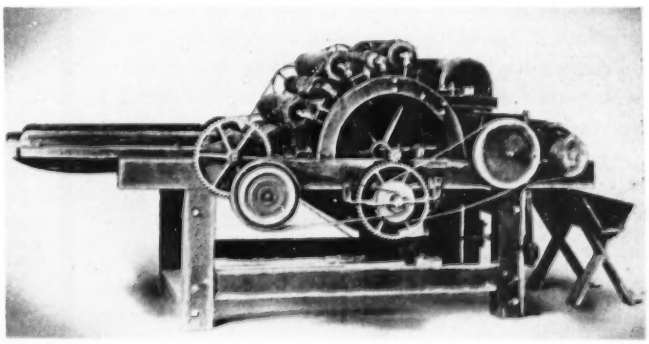
Consumption of Man-Made Fibers in Carpets. The consumption of man-made fibers in carpet and rug yarns was 25,112,000 pounds in 1953, or about 14 per cent of the total consumption of all fibers for this use. The share of the market held by man-made fibers has dropped from 15 per cent in 1952 and 21 per cent in 1951. During this period the production of all-wool carpets showed a drop from 44,300,000 square yards in 1951 to 42,800,000 square yards in 1953. —*Textile Organon.*

Knitted Pad for Railway Journal Boxes? The Association of American Railroads is experimenting with knitted pads as a replacement for cotton waste in lubricating the journal boxes of railroad cars. Tests are still in progress, and no conclusions have yet been reached.

Tariff Question Life-or-Death Issue. Characterizing as an "attack from the dark" the inflow of competitive imports from countries which operate through cartels or state regulated trade methods, Dr. Claudius T. Murchison, economic advisor to the American Cotton Manufacturers Institute, stated that current proposals for sweeping tariff cuts pose a life-or-death issue for many American indus-

Old Card to Smithsonian Institute

The first woolen card to ever operate in the United States has been presented to the Smithsonian Institute by Davis & Furber Machine Co. A plaque on the underside of the machine states that it was built in England in 1792, but the Smithsonian's curator of textiles believes that it was built in this country by the Scholfields, who constructed it from memory to circumvent the English prohibition on export of textile machinery.



Take advantage of these Free Celanese technical bulletins

In order to help mill customers and serve the textile industry generally, Celanese makes the following technical pamphlets available without charge in the quantity that you need. These bulletins have been prepared by the Textile Division, Celanese Corporation of America.

1. "Cone-Over-Cone Plying for 'Colorandom' Effects" —Complete instructions, including working blueprints, for plying yarn, quilling and weaving random colored fabrics.

2. "Processing Fortisan* Yarn"—Yarn characteristics, warping on both cotton and silk systems, slashing, quilling, weaving, throwing, dyeing and finishing of this super-strong Celanese* rayon.

3. "Solvent Dyeing of Fabrics Containing Celanese* Acetate"—Information and processing suggestions to obtain added wet fastness properties in fabrics containing acetate fiber by means of solvent dyeing.

4. "Dyehouse Processing of Fabrics Containing Celaperm*"—Finishing techniques for fabrics containing Celaperm acetate yarns with table summarizing Celaperm fastness to bleaching, stripping, cross dyeing and after treatments.

5. "Acetate Blends of Improved Performance"—Engineering blends of acetate and rayon, and acetate, rayon and nylon for greatest performance characteristics . . . finishing techniques to enhance these characteristics further . . . construction, dyeing and performance characteristics of acetate and wool blends.

6. "Silicones versus Can Sticking"—Coatings on slasher cans and how this treatment helps prevent broken filaments, rough edges and minimizes water spots.

7. "Physical, Chemical and Electrical Properties of Celanese* Acetate Yarn Pertaining to Acetate as an Electrical Insulating Material."

8. "Reduction and Control of Reed Marks" (available soon)—Preventive steps to eliminate warp streaks in fabrics caused by faulty or damaged reeds . . . making and using the triple spring reed.

9. "Handbook of Celaperm* Yarn Performance" (available soon)—Describes color performance of this yarn against all normal color hazards, including washing, wet or dry crocking, sunlight deterioration, rubber degradation resistance.

10. "Preparation of Celanese* Acetate Tricot for Printing." (available soon)

Celanese

Corporation of America

For your copies of any of the above bulletins, write to: Customer Service Dept., Textile Division, Celanese Corporation of America, Box 1414, Charlotte, North Carolina.

*Reg. U.S. Pat. Off.

tries. Despite the edge in efficiency held by American industry, it cannot bridge the cost gap existing between it and low-wage, state-subsidized foreign competitors. Dr. Murchison's report, "The Cotton Textile Industry and Foreign Economic Policy," is available without charge from the ACMI, at 1625 I St., N.W., Washington 6, D. C.

Improved Outlook for Wool. A moderate upturn in mill consumption of wool, reversal of the declining trend in manufacturer's new orders for wool fabrics, and an increase in the production of men's summer-weight suits containing 50 per cent or more wool, points to a good year for wool in 1954, according to The Wool Bureau.

Time Study Techniques for Labor and Management. "A Fair Day's Work" is the title of a research report released recently by the Society for the Advancement of Management. The report is a detailed study of performance rating, and is expected to receive acceptance by both labor and management as a primary reference.

Textile Fraternity to Meet At Lowell. The annual convention of Delta Kappa Phi textile fraternity will be held April 29 and 30, 1955, at Lowell, Mass. The fraternity's Beta chapter at Lowell Technological Institute will be host.

Electronic Computer Center at Georgia Tech. Pending completion of Rich's Electronic Computer Center at Georgia Institute of Technology, where the school's electronic digital high-speed computer will be housed, a medium-size, general-purpose computer will be purchased and put into operation as soon as possible. The services of the two computers will be made available to southeastern business and industry.

One-Step Dyeing and Finishing Machine. A new one-operation dyeing and finishing machine for nylon hosiery and woven or knitted fabrics of other synthetic fibers is now in the pilot plant stage, according to Proctor & Schwartz, Inc. Suitable only for mills with fairly large production, the machine will not be commercially available for at least a year.

Cure for Hosiery Industry's Ills? The FTC should step into the picture to halt the practice by marginal full-fashioned hosiery mills of dumping excess inventories at below cost and thereby depressing the price structure of the whole industry. This is the opinion of an executive of a major southern full-fashioned mill. Firmer pricing and selling policies are the surest way to lift the industry from its current doldrums.

They'll Spin It Next. A machine that picks, cleans, gins, and bales cotton in the field is reported to have already been used successfully in several cotton growing states. According to the inventor, it will permit a saving of about $75 per 500-pound bale in picking, ginning, bagging, ties, hauling, compressing, and other costs.

Dry Chemical Fire Equipment OK for Electric Motors. Tests recently made at Winnipeg, Manitoba, indicate that dry chemicals can be used to extinguish fires in electric motors without damaging the equipment, contrary to belief in some quarters. After the fire, the chemical should be blown out of ball bearing motors with an air hose. The bearings of motors using sleeve or roller bearings should be drained, flushed, and refilled or greased, and the balance of the equipment blown off.

Longer Life for Cotton Pick Sacks. Considerably extended wear life is imparted to cotton pick sacks coated with Geon vinyl plastic, recent test results indicate. A coated sack loaded with 65 pounds of cotton was dragged for 21 miles at 4 miles per hour before it wore through, while an uncoated sack wore through after being dragged only 7½ miles under the same conditions.

Communique from Behind the Iron Curtain. A new plant with 32 circular knitting machines has gone into operation in Hungary, with a target of 108,000 jerseys, cardigans, and pullovers in the first quarter year.

More Power for America. American industry's consumption of electric power will increase 55 per cent within the next ten years over the record current level of 257 billion kwh. Projections of current trends show a consumption topping 400 billion kwh by 1963, with a rise from 9½ to 15 kwh per man-hour of production, according to Tomlinson Fort, Westinghouse Electric Corp. vice-president.

Stocking Production in Germany. The West German monthly production of circular knitted stockings is at present about seven to eight million pairs a month or about double the production of full-fashioned stockings.

Calls for Duties on Lace Imports. Citing the fact that imports now supply almost half the U. S. market for lace, E. F. Walker, executive director of the American Lace Manufacturers Association, has called for adequate tariffs to protect the U. S. lace industry. The rising tide of lace imports, which in some cases has increased as much as 2,000 per cent under the trade agreements program, has already idled over 2,000 American operatives and threatens the entire domestic industry, according to Mr. Walker.

New Scholarship at PTI. A 3-year, $3,000 support scholarship has been founded at the Philadelphia Textile Institute by the Hubshman Foundation, Inc. It will be awarded each year to an outstanding sophomore at the Institute.

Increased Learner Rates in Hosiery Industry. Effective May 3, sub-minimum wage for learners in seamless mills went to 67½ cents for first 480 hours of training and 72½ cents for second 480 hours. Full-fashioned rates for the same periods went to 70 cents and 72½ cents, respectively. Knitting and looping were eliminated as occupations in which the employment of learners at sub-minimum rates is authorized in the full-fashioned branch of the industry.

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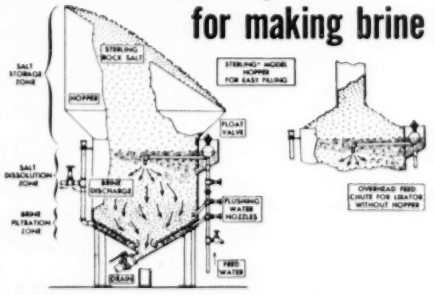
the **LIXATE*** process for making brine



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In the dissolution zone—flowing through a bed of Sterling Rock Salt which is continuously replenished by gravity feed, water dissolves salt to form 100% saturated brine. **In the filtration zone**—through use of the *self-filtration* principle *originated by International Salt Company*, the saturated brine is thoroughly filtered through a bed of *un*dissolved rock salt. The rock salt itself filters the brine. Nothing else is needed.

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AN EXECUTIVE Views

THE NEWS IN TEXTILES

Prepared by a man who is closely identified with the textile industry.

Repeal Walsh-Healey

WITHIN recent weeks two pamphlets have come across our desk which deal with the highly controversial Walsh-Healey Public Contracts Act. From comments in TEXTILE INDUSTRIES and elsewhere readers will probably remember that the Walsh-Healey Act is the law which requires that certain standards be met for work on government contracts, among them being the payment of specific minimum wage.

In the cotton and synthetics branches of the textile industry, this has been raised within the last year and a half from 87c an hour to $1.00 an hour, and in the woolen and worsted branch it has been raised within the last few months from $1.05 an hour to $1.20 an hour. A suit is now pending in the Federal Courts regarding the $1.00 minimum and in all likelihood, by the time you read this, a second suit will have been filed against the woolen minimum.

At any rate, these two pamphlets deal with a problem which is important to management in every American industry. One is entitled "Wages by Administrative Edict: the Story of One American Industry" and it was published by the American Cotton Manufacturers Institute, Inc., 203-A Liberty Life Building, Charlotte, N. C. The other was published by the Radio-Electronics - Television Manufacturers Association, 777 Fourteenth Street, N. W., Washington, D. C., and is entitled "The Walsh-Healey Act—the labor law that really needs revision."

The ACMI pamphlet tells the story of the suit filed by the cotton and synthetic mills against the Secretary of Labor, with the entire story being told in five printed pages. The case for American industry is summed up in the final paragraph of the pamphlet:

> "This case confronts industrial America with a question of grave import and serious consequence that strikes at the root structure of our democratic concept of government by, of, and for the people: shall one man in America—the Secretary of Labor—be vested with the authority to 'determine' nation-wide minimum wage rates for every industry in the country which does business with the government—and thus indirectly for all other industries? If we are to give to one man such absolute dictatorship over American industry, then it may be that we shall have sold ourselves into a bondage from which there shall be no return."

The study of the Radio-Electronics-Television Manufacturers Association is a carefully documented study which explains the history of the Act, its provisions, the administration of the wage sections, the way wage "determinations" are made, and the need for corrective amendments by Congress. Incidentally, the national importance of the textile suit against the Secretary of Labor is pointed out in the statement contained in the pamphlet that: "It might be well to note that so far as the government's side of the controversy is concerned, this case is the first suit since *Luken*, in which the government has had to defend a wage determination of the Secretary of Labor."

This second pamphlet also explains that several bills are now pending in Congress which would undermine the textile suit and which are likely to come up for a vote during the current session. The one most likely to pass, says the pamphlet, is that of Senator Payne (R-Me.)—a bill which would eliminate any further controversy over the proper interpretation of the term "locality," by giving the Secretary of Labor the specific power to issue wage determinations on an industry-wide basis.

A study of both these pamphlets seems to us to lead inevitably to one conclusion: the Walsh-Healey Act should be repealed.

How It Started

It will be recalled that one of the major political objectives of the Roosevelt Administration was the attempt to fix minimum wage and maximum hours for employees in industry. The National Industrial Recovery Act, better remembered as the NRA, tried to do this by establishing industry codes. As best we can recall, the textile industry was the first in America to have such a code — although, to many, that was a doubtful honor. In 1935, however, in the *Schechter Poultry* case the Supreme Court declared the NRA unconstitutional and government lawyers immediately began to look for a detour around this roadblock. The result was the passage in 1936 of the Walsh-Healey Public Contracts Act, a law which dealt only with work done for the government, and which was believed to be constitutional.

Two years later, after extensive revision and rewriting, Congress

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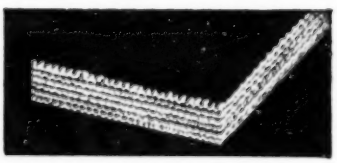

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passed the Fair Labor Standards Act which became law in June 1938. FLSA set wage and hour standards for all industries and businesses engaged in interstate commerce, and it would thus have seemed that as of June, 1938, the Walsh-Healey Act became obsolete. Nevertheless, no serious attempt has ever been made to repeal the Act, in spite of the fact that a number of Senators and Congressmen have been outspoken in their condemnation of its principles. In a political atmosphere dominated by left-wing politics, this was understandable because, as someone said many years ago, "The first requisite of a statesman is to be elected."

Now Is the Time

Now that the country has learned that labor does not vote in a bloc, it would appear that the time has come to give serious consideration to a repeal of Walsh-Healey. The textile case or cases now pending in the Federal Courts have seriously threatened the life of the administrative agency, whose task it is to enforce Walsh-Healey, and Congress has a firm check-rein on sweat-shop conditions through the provisions of the Fair Labor Standards Act.

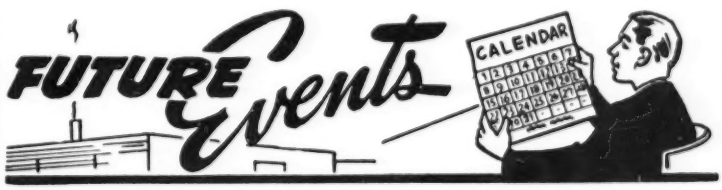
There is some possibility that manufacturers in all parts of the country — not just in the textile South — would be interested in seeing such action taken. For example, the study of the Radio-Electronics-Television Manufacturers Association points out that recent surveys have revealed that in the new industries established in New England following the decline of textiles, the wage rates paid tend to be somewhat lower than the wages paid in competing plants in the Middle Atlantic States or on the Pacific coast. Thus, says the pamphlet, ". . . The New England companies in those fields would be at the same disadvantage in the government contract market which southern cotton and woolen textile manufacturers face, should the challenged wage decisions for these industries ever become effective." The study points out that if the amendments now pending in Congress should pass the result would be disastrous to New England.

But the real case against Walsh-Healey is much broader than that It is summed up ably in the ACMI pamphlet, "Wages by Administrative Edict:"

> *"If the Department of Labor's position should be sustained by the Courts, or if the textile case should be undermined by Congressional action, it seems obvious that the Secretary of Labor would then have an unchallenged, free hand in determining wages for practically every major industry in America. It also seems entirely possible that he might have the additional authority to determine minimum wage rates, not only by industries, but also for specific job classifications within each industry. Thus it is that the implications of the Alabama Mills case extend far beyond the limits of the textile industry."*

If the American people want to take a step back from the dictatorship of bureaucratic control, the Walsh-Healey Act is an excellent place to start.

What do you think about it? TEXTILE INDUSTRIES would be interested in your opinion.



June 7-10 — Annual meeting, **Society of the Plastics Industry,** Public Auditorium, Cleveland, Ohio.

June 8-11 — Annual conference of **The Textile Institute,** held jointly with the Society of Dyers and Colourists, Grand Hotel, Scarborough, England.

June 10-12—Annual meeting, Southern Textile Association, Ocean Forest Hotel, Myrtle Beach, S. C.

June 11—53rd annual **Alumni Reunion of Philadelphia Textile Institute,** Manufacturers Golf and Country Club, Oreland, Pa.

June 13-18—Annual meeting, ASTM (11th Exhibit of Testing and Scientific Apparatus and Laboratory Supplies and 9th Technical Photographic Exhibit). Sherman and Morrison Hotels, Chicago, Ill.

Sept. 9-12—Fourth Canadian Textile Seminar, Queen's University, Kingston, Ontario, Canada.

Sept. 13-14—Fall meeting of **The Fiber Society,** McGill University, Montreal, Canada.

Sept. 15-16—National convention, American Association of Textile Chemists and Colorists, Biltmore Hotel, Atlanta, Ga.

Sept. 23-24—Annual meeting, **Combed Yarn Spinners Association,** Grove Park Inn, Asheville, N. C.

Sept. 27-30 — **Industrial Packaging and Materials Handling Exposition,** Competition, and Short Course, The Coliseum, Chicago, Ill.

Oct. 4-8—18th **Southern Textile Exposition,** Textile Hall, Greenville, S. C.

Oct. 14-15—Annual convention, **The Quartermaster Association,** Sheraton Plaza, Boston, Mass.

Oct. 14-15—Annual meeting, North Carolina Textile Manufacturers Association, Carolina Motel, Pinehurst, N. C.

Oct. 23—Fall meeting, **Textile Operating Executives of Georgia,** Georgia Institute of Technology (A. French Textile School), Atlanta, Ga.; topics: slashing and weaving.

Nov. 15-17—Fifth national **Conference of Standards,** sponsored by the American Standards Association, Hotel Roosevelt, New York City.

1955

Jan. 24-27 **Plant Maintenance and Engineering Show,** International Amphitheatre, Chicago, Ill. Held in conjunction with conference at Conrad Hilton Hotel.

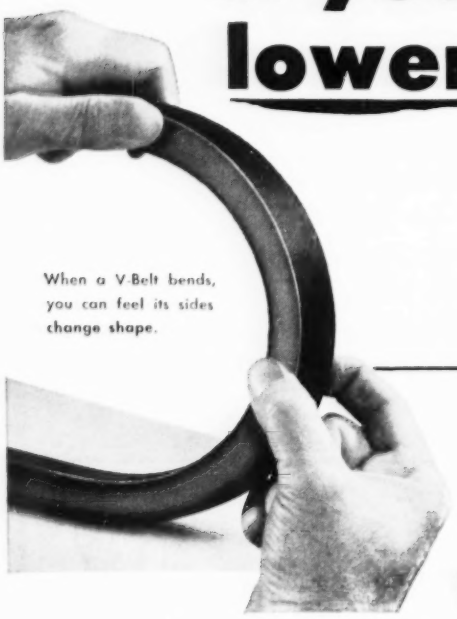
Jan. 31-Feb. 1—Annual convention, **National Cotton Council of America,** Hotel Shamrock, Houston, Texas.

Jan. 27-29—Annual conference, **Textile Div., American Society for Quality Control,** Clemson (S.C.) College.

Mar. 31-Apr. 2—Annual meeting, **American Cotton Manufacturers Institute,** Palm Beach (Fla.) Biltmore Hotel.

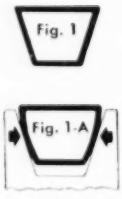
June 25-July 10—**International Textile Exhibition,** Brussels, Belgium.

if you want lower V-Belt costs—



When a V-Belt bends, you can feel its sides change shape.

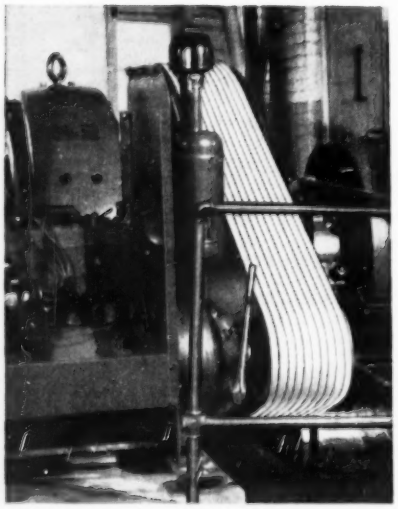
just make this simple test



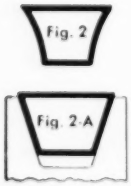
Take *any* V-belt that has *straight* sides (Fig. 1). Bend that V-belt while you grip its sides with your fingers. You will *feel* the sides *bulge out* (Fig. 1-A). Clearly, that out-bulge forces the belt to press *unevenly* against the V-pulley—and this *concentrates* wear at the points shown by arrows (Fig. 1-A).

Now bend a Gates Vulco Rope with CONCAVE SIDES (Fig. 2)

(U.S. PAT. NO. 1813698)



Typical Gates Vulco Rope Drive —the Gates V-Belts are built with Concave Sides to insure longer belt wear.



Instead of *bulging*, the precisely engineered CONCAVE SIDES merely *fill out* and become perfectly straight. This belt, when bent, *precisely fits* its sheave groove (Fig. 2-A). The sides of the Gates Vulco Rope press *evenly* against the V-pulley. Therefore, wear is distributed *uniformly* across the *full face* of this belt —resulting in *longer* belt life and *lower* belt *costs* for you!

When you buy V-belts, be sure to get the V-belt with the Concave Sides—the Gates Vulco Rope!

Gates VULCO ROPE DRIVES

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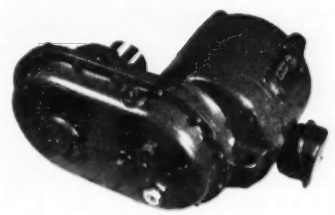
CS-F

NEW Equipment AND MATERIALS

Cotton Card Drive Mounts Directly on Cylinder Shaft

A new gearmotor drive for cotton card machines mounts directly on the card shaft and eliminates the need for line shafts and belting. A torque arm anchors the unit to the card frame, and prevents the gearmotor from turning. The whole assembly requires approximately the same aisle space normally required for a belt pulley.

A double-reduction set of helical gears reduces motor speed to proper card-operating speed. The 1½ hp high-torque motor is totally enclosed and non-ventilated, and is especially designed for card service.



Westinghouse Electric Corp., Gearing Division, Dept. T-081, 200 McCandless Ave., Pittsburgh 1, Pa.

For additional data, request item F-111, using Handy Return Card on page 204.

Inspect up to 200 Dozen Pairs of Hosiery per Shift with Automatic Machine

The Sotco (Southern Textile Machinery Co.) automatic hosiery inspection machine permits the inspection of as many as 200 dozen pairs per inspector per eight-hour shift or more, depending on the speed of the inspector. Controls are simple enough to permit the average inspector to produce as many as 125-150 dozen pairs after a minimum briefing.

Occupying a space approximately 6′ x 8½′, the machine operates on 110-volt, 60 cycle, a-c current and can be furnished for use either with the Dunn or similar methods, or with a stacking attachment for restoring the stockings to the trays prior to the preboarding operation.

The inspection machine is electronically operated, combining a series of electrically operated relays with regulated air pressure to strip an expanding form. The inspector pulls the stocking over the form, expands the form with foot treadle, inspects it for defects (by flipping the form she inspects both sides), trips the foot lever and the stocking is automatically turned and stripped from the form and deposited in the dye bag, or hosiery tray if stacking attachment is used.

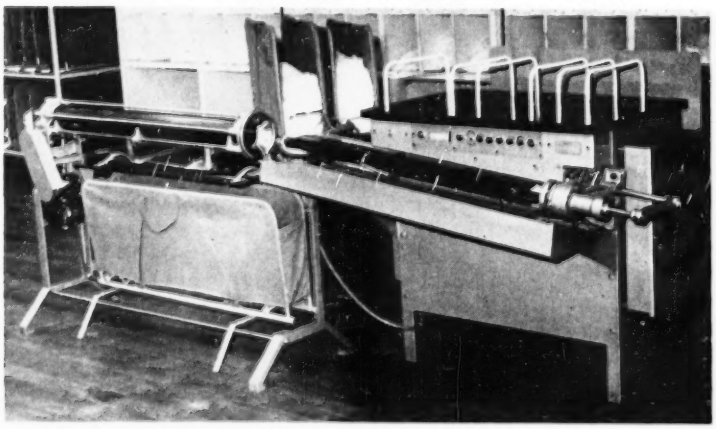
An automatic counter counts only the good work. If a stocking is defective, the inspector pushes the bad work button and the stocking is stripped from the form and turned; it is not blown through the turning tube, but is deposited in the mouth of the tube, and the inspector picks it up and puts it between the divider rods on the top of the machine.

The work elevator which extends from the left side of the machine supports a shelf for holding the hosiery racks for the stockings. The inspector can raise and lower the elevator with an up and down switch on the front of the machine. The welt of the stockings in the tray is always parallel to the end of the inspection form.

Marvel Specialty Co., Paducah, Ky.

For additional data, request item F-115, using Handy Return Card on page 204.

The Sotco automatic hosiery inspection machine (Marvel).



Roll Pressure Hydraulically Controlled on New Padder

The "Rocket" Padder, a two-roll, open width dyeing machine, features roll pressure control that is hydraulic—the hydraulic unit is smaller, more efficient, and can produce pressures up to 15 tons.

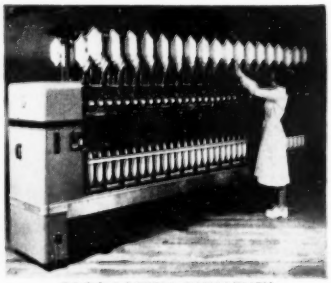
The driven roll at bottom is made

IF OBSOLETE EQUIPMENT IS STRANGLING YOUR PROFITS BY INCREASING YOUR COSTS — IT'S TIME TO *Saco-Lowellize*

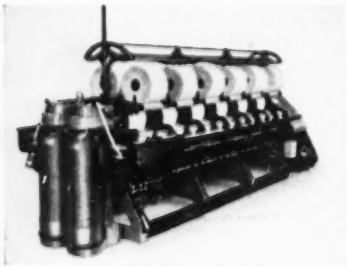
SACO-LOWELL No. 15 OPENER WITH F-7 CLEANING AND BLENDING FEEDERS

Saco-Lowellizing eliminates losses due to obsolescence; increases efficiency; improves quality — specifically, the Saco-Lowellizing program decreases your operating costs — helps you produce a better product and make a larger profit.

Call the nearest Saco-Lowell office — arrange to have a Saco-Lowell Engineer prepare a "Forecast of Savings from Saco-Lowellizing" for your mill.

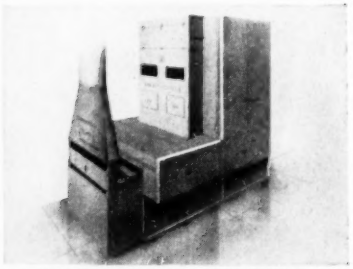


SACO-LOWELL GWALTNEY SPINNING FRAMES



SACO-LOWELL COMBERS

SACO-LOWELL 4 OVER 5 DRAWING FRAME



SACO-LOWELL No. 16-1 OPENER

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of stainless steel; the top roll is rubber. The dye box features a foam trough to reduce foaming of the dyebath. The machine can also be adapted for three-roll operation.

H. W. Butterworth & Sons Co., Bethayres, Pa.

For additional data, request item F-119, using Handy Return Card on page 204.

No Need to Stock Replacement Parts for this Adjustable Speed Drive

A new type of adjustable speed drive called the "Franklin Drive" is now being offered in nine different sizes from one-quarter through five horsepower.

Selenium rectifiers are used for rectifying the power supplied to a d-c motor in contrast to conventional electronic rectification and rotating machine rectification. Rectification is controlled by magnetic amplifiers to give a drive which has a 100 to 1 speed range with flat speed regulation out to full load at the lowest speed.

Advantages of the drive include the fact that selenium rectifiers and magnetic amplifiers will not burn or wear out in ten years of normal service. Thus there is no need to stock replacement parts and production need not be interrupted for servicing.

Notable construction features of the drive are its very compact panel layout, industrial control panel type wiring, and easy installation cabinet.

Franklin Control Corp., 1975 S. Allis St., Milwaukee 7, Wis.

For additional data, request item F-109, using Handy Return Card on page 204.

Packaged Infrared Panel for High-Intensity Heating Requirements

A new heavy-duty infrared generator for high-intensity heating requirements has been especially designed and constructed for web-fed processes such as heat setting, heat stretching, tenter preheating, hot flue preheating, singeing, curing resin finishes, preheating and heating after treatment in dyeing Dacron with vat acid, and permanent calendering and embossing.

Designated the Chromalox Electric Radiant Heating Panel, it measures 66" x 12" and is built to span large webs.

Quickly absorbed, "color blind" far-infrared radiation at its highest intensity — 2.7 kilowatts per square foot in the standard model — is distributed with extreme uniformity over extended areas, even at closest work spacings. Output can be easily controlled from 4% to 100% of 15 kilowatt capacity, with element temperature up to 1450 F. Standard voltages are 240 and 480, while special panels of other watt ratings and voltages up to 600 volts can be made to order.

These "packaged" panels are pre-engineered to go on the job without

NEW Equipment AND MATERIALS

electrical or mechanical complications. Every essential oven component is built in. The panels are easily mounted on simple angle iron supports. No fans or cooling equipment are required as the panel is designed to operate at 700 F on the work.

Edwin L. Wiegand Co., 7500 Thomas Boulevard, Pittsburgh 8, Pa.

For additional data, request item F-601, using Handy Return Card on page 204.

New 2-for-1 Rocket Spindle for Existing Uptwisters

Performance that triples the twist production per unit floor space of continuous filament yarns of standard twisters is obtained with the new 2-for-1 "Rocket" spindle developed by Deering Milliken Research Trust.

Named the Rocket Spindle because of its speed and streamlined shape, it is a very compact unit designed and engineered with three primary objectives: To impart twist more economically, to produce a more uniform yarn, and to accomplish these results within a very limited space. It is designed as a changeover for conventional spindles on practically all uptwister frames.

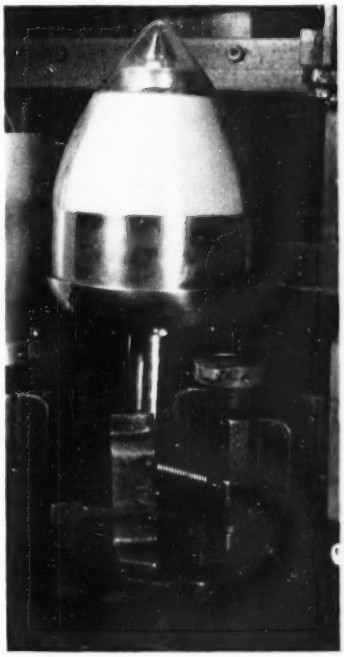
Yarn quality is improved due to the constant-tension balloon characteristic and the exact twist insertion. The great importance of uniform tensions in the production of superior quality yarns has been recognized by the industry, and the present spindle has been designed to meet this need. In many constructions, box looms are used only for mixing filling in order to mask differences in yarn uniformity resulting from uneven tension, and an improvement in yarn uniformity will permit the replacement of box looms by single shuttle looms at considerably reduced operating cost.

This spindle has the following prime characteristics:

1. It can twist such continuous filament yarns as rayon, acetate, Bemberg, nylon, Dacron and Orlon. Time has not permitted the evaluation of the spindle with other filament yarns.

2. Will handle zero-twist yarns as well as those having manufacturer's or initial twist.

3. Covers a denier range from 30 to 210 with the present design.



The "Rocket" spindle.

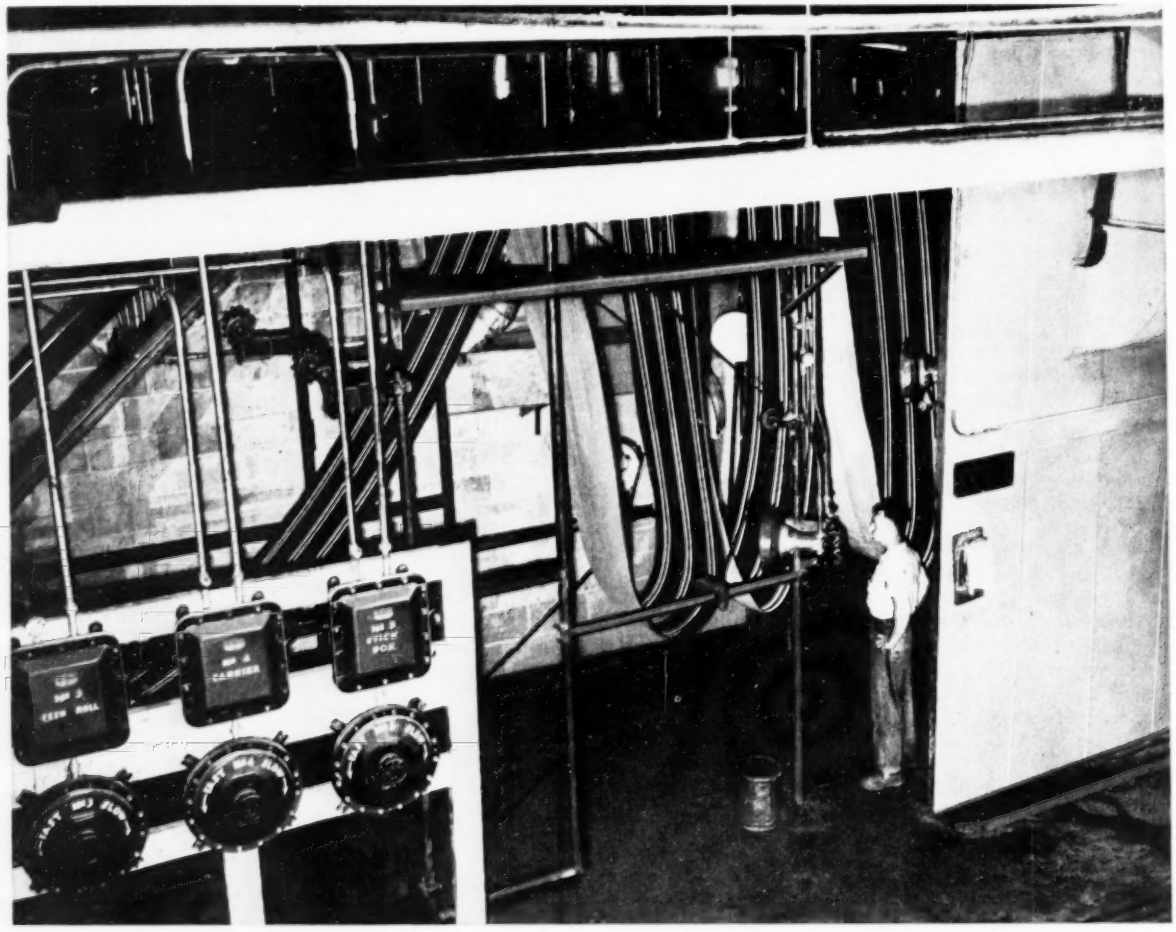
4. Has a twist production rate of 31,000 turns per minute, approximately three times that of conventional spindles.

5. Provides constant tension within plus or minus 5% from the start to the finish of the yarn package, with tension in grams for most yarns less than one-third the yarn denier.

6. Is made to fit into a gauge space of 5⅝ inches to be directly interchangeable with conventional upstroke spindles on standard frames.

7. Accommodates a creel-in spindle package of 1¼ pounds capacity.

The Research Trust will not manu-



WESTINGHOUSE FANS *DRY* OIL-PAINTED AWNING CANVAS!

Twelve Westinghouse Heating Coils combined with six Westinghouse Silentvane Fans dry oil-painted canvas for the Graniteville Company. The wet canvas, hung on a 450-foot-long festoon-type drier (one of the longest in the country), comes rolling out bone-dry at the rate of 220 feet per minute!

This rapid-dry system was designed for Graniteville by J. O. Ross Engineering Corporation. Ross selected Westinghouse-Sturtevant equipment for the job of handling 73,310 cfm of air a minute. And here's a dollar-saving bonus for Graniteville: in six years, operating five days a week, Westinghouse fans have required no maintenance, only normal grease and oil . . . 1560 consecutive days of trouble-free service.

For *your* air handling problem, contact your Westinghouse-Sturtevant Sales Engineer. He's completely qualified and backed up with the most complete line of air handling and air cleaning equipment. Call your nearest Westinghouse-Sturtevant office now or write Westinghouse Electric Corporation, Sturtevant Division, Hyde Park, Boston 36, Mass.

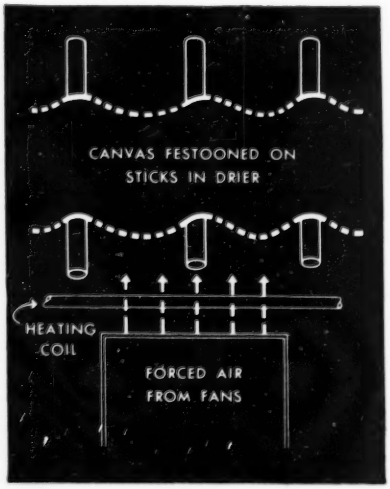


Diagram shows how six Silentvane Fans force air through heating coils on to festoon drier.

WESTINGHOUSE AIR HANDLING

YOU CAN BE SURE... IF IT'S **Westinghouse**

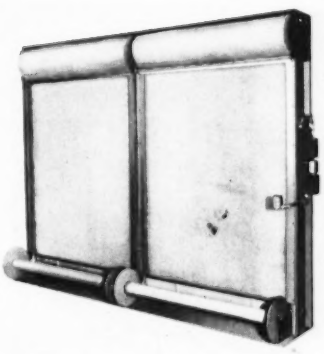
facture this spindle. A license agreement with a textile machinery producer for its manufacture and sale will be negotiated and announced at a later date.

Deering Milliken Research Trust, Pendleton, S. C.

For additional data, request item F-102, using Handy Return Card on page 204.

Automatic Air Filter Is Self-Cleaning

The Roll-O-Matic is an automatic self-cleaning air filter introducing a new adaptation of glass fiber filtering media, designed for use in commercial and industrial ventilating and air conditioning systems to clean both outside and recirculated air. This new filter combines the desirable characteristics of both dry type and viscous impingement air filters —the simple operation and convenient maintenance of the dry type with the large dust holding capacity and higher allowable operating resistance inherent to the viscous principle.



The "Roll-O-Matic" air filter by American Air Filter Co.

The Roll-O-Matic filtering media is a continuous length of fiber glass material, similar to that used in AAF AMER-glas filters, except that it is supplied in rolls of approximately 70 linear feet. The material from the roll of clean media, mounted at the top filter casing, is transported on a continuous screen that rotates over top and bottom sprockets, down the face of the filter and is rerolled at the bottom after collecting its dust load.

A pressure switch sensitive to the resistance differential across the filter curtain actuates a drive motor that rotates the screen and feeds a certain amount of clean media into the filter curtain when the resistance reaches a predetermined point. In this way media usage is in direct proportion to dust conditions and hours of operation.

American Air Filter Co., Inc., Louisville, Ky.

For additional data, request item F-105, using Handy Return Card on page 204.

Device Holds Moisture at Slasher within ± 1%

A new slasher moisture controller may be adjusted to hold any moisture content between 4% and 12% by weight of yarn leaving the slasher.

(Continued on page 211)

Whitin's Roto-Drafter Can Also Be Used as Wide Range Drawing Frame

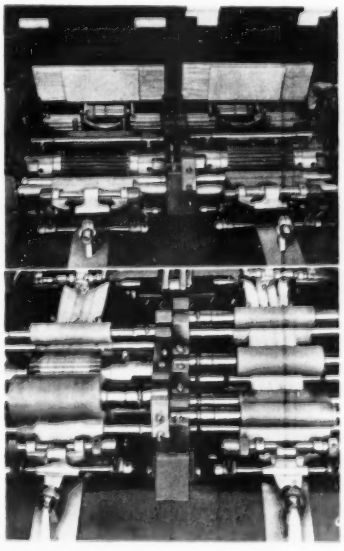
Pictured below at the right is the Whitin Roto-Drafter which, according to the announcement in TEXTILE INDUSTRIES for April, 1954, page 147, was developed to increase the flexibility of Whitin's American System equipment.

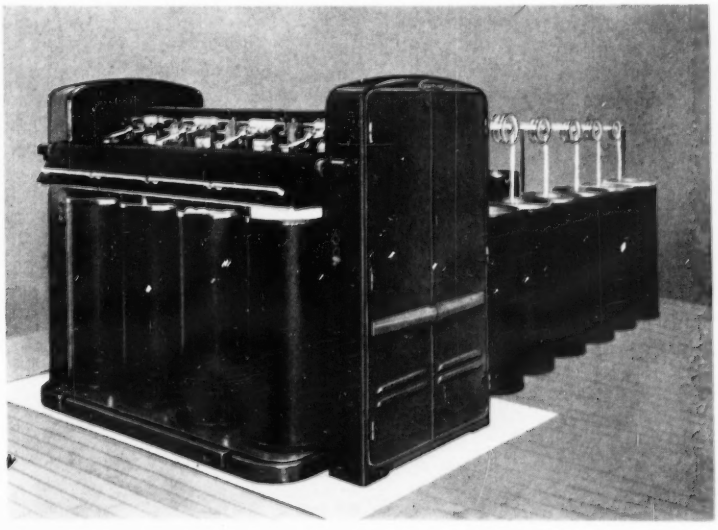
The machine performs what is essentially both a drawing and drafting operation on top made from wool, synthetic, or blended fibers in lengths from 2" to 9".

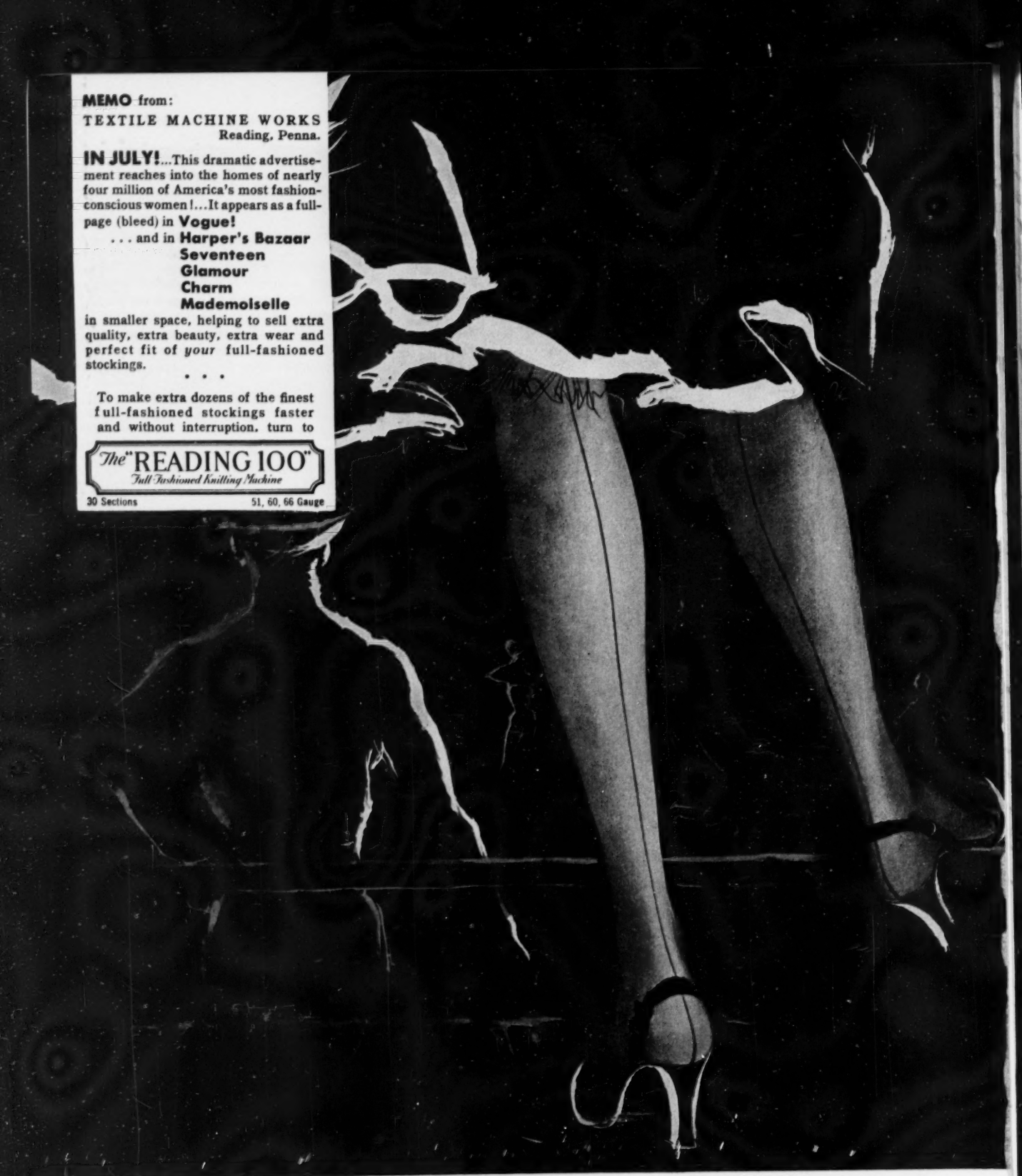
Highly flexible, the frame can be used as a Roto-Drafter which has as its essential feature a cylinder covered with pins whose angular position relative to the cylinder surface changes to control the fibers as they are drawn from the delivery rolls and released to the front rolls (see top photo at left); or it can be quickly converted to a wide range drawing frame by any mill mechanic in about one-half hour (bottom photo at left).

Whitin Machine Works, Whitinsville, Mass.

For additional data, request item F-602, using Handy Return Card on page 204.







MEMO from:
TEXTILE MACHINE WORKS
Reading, Penna.

IN JULY!...This dramatic advertisement reaches into the homes of nearly four million of America's most fashion-conscious women!...It appears as a full-page (bleed) in **Vogue!**
. . . and in **Harper's Bazaar**
Seventeen
Glamour
Charm
Mademoiselle
in smaller space, helping to sell extra quality, extra beauty, extra wear and perfect fit of *your* full-fashioned stockings.

• • •

To make extra dozens of the finest full-fashioned stockings faster and without interruption, turn to

The "READING 100"
Full Fashioned Knitting Machine

30 Sections 51, 60, 66 Gauge

PUT YOUR LEGS IN THIS PICTURE . . .

See *your* legs as others see them—in stockings that are custom knit to fit skin-smooth at every crucial point . . . And with that fine back seam that flatters the ankle and accents the lines of beauty . . . that pencil-line link between hemline and shoe that emphasizes sheerness and color . . . *Your* legs—at their loveliest in full-fashioned stockings! . . .

© Hosiery Fashions 1954

To sell more textiles: Create new power and efficiency in promotion and merchandising—use ingenuity—and undertake Consumer Research

(ACMI Annual Convention)

Staff Report

AT THE TIME of the fifth annual meeting of the American Cotton Manufacturers Institute in New Orleans (April 22-24), the expected rise in the price and profit picture had again passed the industry by, but retiring ACMI President H. K. Hallett of Kendall painted a potentially rosy picture in textiles for the next two decades — provided the industry uses ingenuity.

The demand for the future, pointed out Mr. Hallett, is flexible and potentially unlimited. He also asked of the convening textile men "what can we do to get the textile industry out of the boom-and-bust category?"

Highlights of Mr. Hallett's comments follow:

The Market. Estimates are that in 1975 our population will not be less than 198 million, maybe as high as 221 million; the daily crop of babies should approximate 15,000, each a new customer for textile products. The purchasing power of the average worker may be expected to be about twice what it is today.

Industry Action to Capture Market. To take advantage of this potentially unlimited demand our industry must generate some new forces of its own, and all the forces must spring from creativeness. We must create new qualities and blends of raw materials — new facilities and new ways of processing — new designs and fashions — new products and uses — new power and efficiency in promotion and merchandising.

Expect Further Modernization. The great modernization movement (begun after World War II) has fully affected not more than one-third of our industry. I anticipate that the next few years will witness a catching-up process on the part of the remaining two-thirds, strongly aided by a more liberal depreciation for tax purposes.

Tie-in With Finishing. Progress in the field of finishing has been truly revolutionary, but progress in the scientific aspects of finishing must be matched by corresponding standards of artistry, design, and color treatment — for the designer and the artist are the indispensable allies of the scientist.

The importance of finishing as a creative force is further magnified by its ability to reach swiftly to new consumer interests, to new vogues, to new fashion concepts. The recognition of this principle of new fashion concepts in finishing and our success in acting upon it will be a major factor of importance in keeping pace with the total national growth.

Stronger Merchandising. At the same time the industry will be improving its techniques of consumer analysis, merchandising, and promotion. We must probe deeply and sensitively into the question "What really makes people buy?" This suggests another kind of research activity — let's undertake consumer research. Instead of turning out goods in large quantities and *hoping* Joe Doe will buy in large quantities, why don't we *know* that Joe Doe will buy our products and in what quantity. On the other hand, maybe it is necessary to find out whether Joe Doe would be more willing to buy some other product which we could produce.

Pay to Get Merchandising Talent. We have reached out to cap-

New Officers of ACMI

J. Craig Smith of Avondale Mills was elected president of the American Cotton Manufacturers Institute at the annual convention, being elevated from first vice-president, and succeeding **H. K. Hallett** of Kendall Company

A. K. Winget of American & Efird Mills was elevated from second vice-president to first vice-president. **F. E. Grier** of The Abney Mills was elected second vice-president.

Robert C. Jackson of Washington, D. C., and **F. Sadler Love** of Charlotte, N. C., continue as executive vice-president and secretary-treasurer respectively.

Avondale's Craig Smith

ture the best brains and experiences in chemistry, physics, biology, and engineering to improve our processes, so why shouldn't we attract the best talent in market analysis, in applied psychology, in communications, and similarly related fields. Through these avenues of endeavor it will be possible to add novelty, perception, and appeal to our selling efforts.

I believe that our industry should pioneer in the exploitation of social sciences to the end of increasing sales and making the sales function more effectively a servant of the consuming public.

Education and Individual Mill Action May Reduce Destructive Boom-and-Bust Cycle. The textile industry is perhaps the world's leading example of the boom-and-bust pattern, and if we are to enjoy the full promise of the future, we must find a way to smooth down this destructive cycle. As we examine past cycles, we find always present two tendencies. The first is an over-zealous expansion of production on the upward phase of the cycle, and the second is a complete market deterioration on the downward phase. In no other industry are these two tendencies so extreme.

In future years we shall find gradual release from these sad experiences, and these releases will come from a more complete knowledge of the facts of production and consumption, a better understanding of the processes of disruption, and above all a keener appreciation of the role of the individual in the stability of the industry.

Foreign Textile Competition (ACMI Resolution). Keeping foremost in mind the wage-cost differentials which presently give overwhelming advantage to the major overseas textile countries, and realizing that United States efficiency, as great as it is, lacks the power to overcome wage disparities ranging from 300 to 1000 per cent in favor of foreign manufacturers, we suggest that one important test be applied to any proposal advanced on behalf of stimulating raw cotton exports. That test is expressed in the following question: Will this enable a foreign industry to gain still greater competitive advantage so that it can undersell American-made textile products not only in the export markets of the world, but here at home as well?

On Foreign Economic Policy (ACMI Resolution). Recommend (1) That further tariff concessions be withheld from those countries which have not put into effect concessions previously granted to the U.S.A. in return for American concessions.

(2) That the original method of bi-lateral negotiation be restored.

(3) That tariff concessions be generalized only to those countries which accord the most-favored-nation treatment to the U.S.A., not only as regards tariffs, but in respect to every other form of trade or exchange control.

(4) That the extension of grants-in-aid or of capital loans to foreign countries from the public funds of the United States, for government or private use, be negotiated on a basis of comity, with the objectives of promoting non-discriminatory trade and equitable treatment of foreign investment.

(5) ACMI believes the time has come for the U.S.A. to introduce realism into its foreign trade policy; and to insist that its sixteen years of trade liberalization be matched by like action on the part of other countries.

Flexible Depreciation (ACMI Resolution Restatement from 1953 Meeting). Recommend a tax program which would permit taxpayers to elect depreciation of productive equipment on the basis of its useful life as determined by the taxpayer, stipulating that the minimum life of buildings should be ten years, machinery and equipment five years, automobiles and other short-lived properties two years, without stipulation as to maximum life.

Factors Affecting Decline in Foreign Sales. Matthew J. Cuffe of the Textile Export Association emphasized how necessary a prosperous export trade is to the smooth and profitable functioning of the textile industry. Since in 1953 American textiles dropped to fourth place in textile exports, led by Japan, United Kingdom, and India in order, Mr. Cuffe explained that rise of foreign competition is only one reason for the U.S.A. market loss; he cited such instances as the following to show the network of restrictions arising in the world to reduce American textile sales in foreign countries:

(1) Canada has stiffened customs regulations and in addition has signed a treaty with Japan which permits Japanese goods to enter that market at the same rates as those of U.S.A.

(2) The Mexican government has put all cotton textiles, even the fabrics not made by mills there,

New Process for Pad Dyeing Synthetics with Acetate Dyes

A new process for pad dyeing synthetics with acetate dyes was announced recently by Interchemical Corporation's Textile Colors Division. The new process has been employed successfully for dyeing acetate, nylon, and Dynel. To date, it has been employed principally for dyeing woven fabrics, but it should be equally satisfactory for dyeing knit goods, braids, and yarn in sheet form.

Among the advantages cited for this process are: excellent penetration of tightly woven fabrics; elimination of shaded selvages; easier shade control in cross-dyeing; and savings in dyeing time, steam, and chemicals.

Essentially, the new method consists of passing the material through an aqueous pad liquor containing a highly dispersed acetate dye, a penetrant, a swelling agent, and a gum; then developing with hot water under controlled conditions of time and temperature. One modification of this basic procedure is the addition of wetting agents or carriers to the pad liquor. Another is the incorporation of fast-to-light direct dyes to provide cross-dyed effects on mixtures or blends of acetate or nylon with cellulosic fibers.

The padder can be set up in range with a developing box and dry cans to permit dyeing, developing, and drying to be carried out in one continuous operation. Alternatively, the fabric can be pad dyed, plaited into boxes, and then developed later in jigs, boxes, or other suitable equipment.

Buck and Goldberg to Preside at Research Conference

The 1954 Gordon Research Conference on Textiles, which is sponsored by The American Association for the Advancement of Science, will be held at Colby Junior College, New London, New Hampshire, July 12-16.

The Gordon Research Conferences were established to stimulate research in universities, research foundations, and industrial laboratories. An informal type of meeting is held which consists of scheduled lectures and free discussion groups. Serving as chairman this year will be George S. Buck, Jr., of the National Cotton Council of America; vice-chairman, J. B. Goldberg, textile consultant.

Lectures scheduled are as follows:

July 12

T. F. Cooke—"The Mechanism of Wrinkle Resistant Finishes for Cellulosic Fabrics."

Herman F. Mark—"Recent Developments in the Synthetic Fiber Field in Europe."

July 13

Allan McQuade — "Recent Work on Flame Resistant Treatments for Textile Fabrics."

R. H. Peters — "A Study of the Initial Stages of the Dyeing Process."

July 14

C. B. Havens — "Preparation and Properties of Fibers from Vinylidene Chloride."

Alex Brown — "Second-order Transition Temperature and Fiber Properties."

July 15

Nils Gralen — "Fiber Friction at Different Velocities."

Herbert G. Lauterbach — "Felts from Man-Made Fibers."

July 16

Newton A. Teixeira — "A Theoretical Analysis of the Mechanism of Tongue-Tear in Woven Fabrics."

Meetings are held in the morning and in the evening, Monday through Friday, with the exception of Friday evening. The afternoons are available for recreation, reading, resting, or participation on discussion groups as the individual desires.

Accommodations are available for a limited number of women to attend; also for wives who wish to accompany their husbands.

Requests for attendance at the conference, or for any additional information, should be addressed to W. George Parks, director, Department of Chemistry, University of Rhode Island, Kingston, R. I.

under license and has increased tariffs 25%.

(3) Dominican Republic, where a small mill recently was established. Any firm wishing to import denims, twills, cotton herringbones, tickings, and canvas will have to submit samples of the fabrics, and if similar to goods produced in country's small mill, permission to import is refused.

(4) Guatemalan government increased the number of cotton items that may not be imported until stipulated quantities of similar domestic goods have been purchased.

(5) Trade with Cuba is shrivelling as a result of the exorbitant tariffs which the so-called Torquay treaty permits the Cuban government to levy on American textiles.

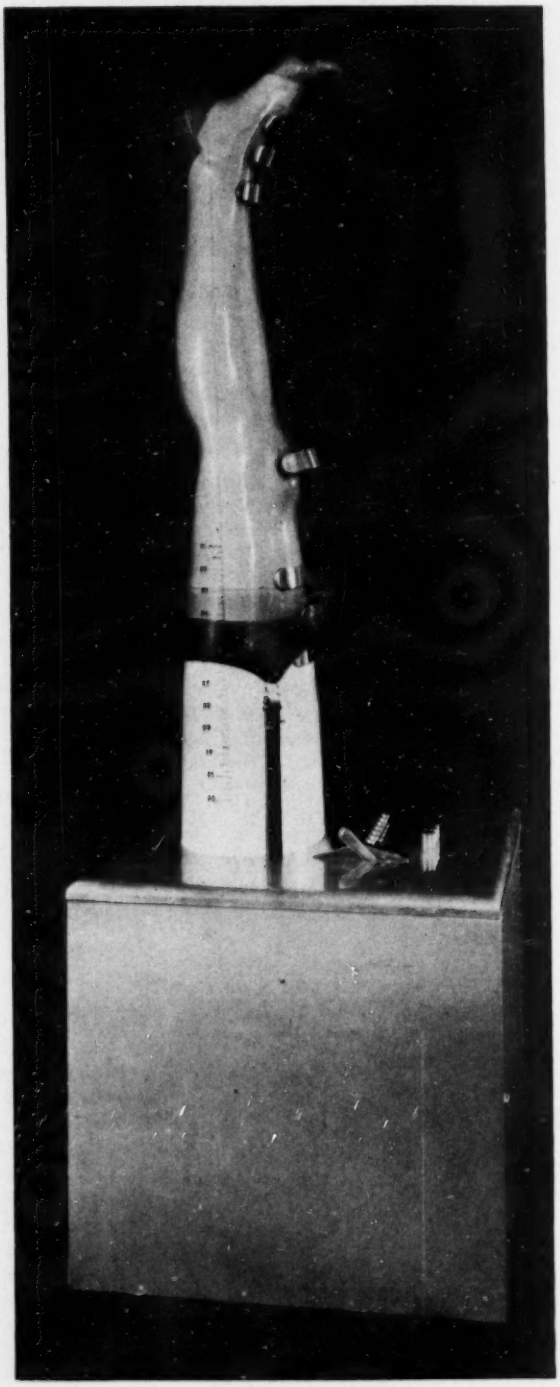
A number of similar reports showed conditions in other countries.

Despite the adverse report on export markets, Mr. Cuffe felt that in the so-called middle ground, American cotton textile manufacturers are supreme; there are no mills in the world which can produce denim, percales, chambrays, vat-dyed twills and drills, corduroys, sheets, towels, and many other items at prices equal to those of American mills when quality factors are taken into consideration.

VOLUMETRIC LEG FORM

By Edmund L. Lauber*

*Before the 17th Hosiery Industry Conference of National Association of Hosiery Manufacturers, Atlantic City, N. J.



hosiery association to lease new quality control device for full-fashioned and seamless ladies' stockings

IN 1946, it was decided by the National Association of Hosiery Manufacturers to develop, in cooperation with the American Standards Association, a method to evaluate fit. It is our belief that if stockings fit better they will give greater comfort and longer wear, reflecting a more normal result from the strength and elasticity inherent in a knitted fabric made of nylon.

After conferences with representatives of the American Standards Association and your Association executives, a committee was appointed, comprised of certain members of our Association, who were technically qualified to investigate the problem, together with a member of the staff of the Bureau of Standards, a representative of Du Pont, so that he might be of any help during the study from a yarn properties standpoint plus the knowledge naturally accruing to that company as a result of their connection with our industry, as well as representatives of ten interested groups from the retailing field. The chair-

man of this committee was the late Hugo Hemmerich.

We worked with the American Standards Association from the inception of this study until the fall of 1953, at which time it was decided that it would be to the best interest of the hosiery industry to disassociate ourselves from them and not proceed further with the establishment of standards. The project is now entirely in the hands of the National Association of Hosiery Manufacturers.

At the very outset, it was apparent that we were faced with the problem of finding a method to test stockings as to their volume possibilities. Women's legs have no fixed shape—and thank goodness—for, aside from the possible monotony of such a condition, our product could be made of woven goods or a number of other materials not having the elastic properties of a knitted fabric. The knitted fabric allows for volume displacement variations from one area to another; therefore, the importance of finding a method to evaluate total volume possibilities in a stocking was important.

Here is how the Volumetric Leg Form was developed.

Mr. Hemmerich suggested that a leg form be constructed that contained plungers, working from within the form, that would simultaneously measure and record the stretch of a stocking in the five critical areas—namely, welt, knee, ankle, instep, and foot. The committee approved of this and Mr. Hemmerich had built, without cost to the Association, such a form, which we now call the Volumetric Leg Form.

The device worked well and consistent results could be obtained. Here, at last, was something positive and accurate. Our job was then to determine a fit standard to correlate with the dial readings on the form device.

The form was taken to twelve hosiery manufacturers located on the Eastern Seabord, and elaborate tests were made between the readings on the form and fit on live models. These tests proved to be positive, and the committee felt that a range within which good fit could be expected could be determined from the results.

We had some area of doubt, however, in that the live models, wearing the stockings of their employers, could have been biased in their answers. To overcome this probability, the same tests were then made with girls at Columbia University and Albright College. Correlations of all statistical data were made by the University of Pennsylvania. Results were positive. It was, therefore, proven to your committee that ranges of satisfactory fit in stockings could be determined by the use of the Volumetric Leg Form.

Textile Machine Works will manufacture the form for sale to the NAHM.

How to Get the Form. The patents covering the form have been assigned to your Association, and the forms will be leased to mills who feel they can use one or more. At all times will title to the device remain with your Association. The terms of the lease will be $600 payable upon execution of the lease, $600 payable upon delivery of the form, for a total of $1,200, and beginning with the sixth year $25 will be payable each year thereafter.

The form will be delivered, f.o.b. Reading, Pa., and the $1,200 rental covering the first five years is the exact cost that Textile Machine Works will invoice your Association for the manufacture of the form and does not cover any of the substantial expenses that have been incurred to date by your Association for the many meetings, travelling expenses of technicians, or statistical studies by the University of Pennsylvania.

Why Association Retains Ownership. You may well wonder why your Association has not decided to have the device sold outright. The answer is simplicity itself: in the hands of some few of your customers it could be used to the disadvantage of manufacturers by claiming that the results obtained on the form do not conform to a predetermined standard of fit. We prefer that it be used by manufacturers as a tool to determine fit and for quality control purposes.

What determines good fit should be left in the hands of the individual manufacturers, on a competitive basis, *and not through regimentation that may result through having a published set of standards to which every manufacturer would almost be required to adhere.*

Quality Control Value. This device can be used primarily by mills producing finished goods and by mills which sell and ship preboarded grey goods. Compared with other devices being used, it will test more quickly, and in one mill with which I am familiar, it will enable three people to perform the functions now carried on by four in the finished goods quality control department. At this rate, it will more than pay for itself in one year and the control of production will be superior.

For mills not having such a department, the use of this machine is the quickest non-technical method of setting up such a finished goods quality control department. The speed with which tests can be made enables a mill to sample and test a larger percentage of its total production, which, theoretically, should result in better fitting stockings because variations in production should be caught quickly.

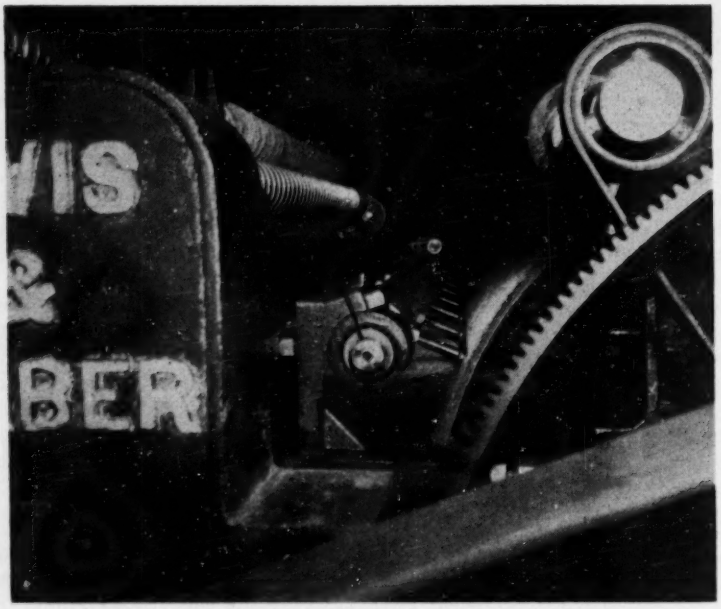
Instead of stretching stockings in each of the five critical fit areas in five separate operations, which is a slow process, this form stretches all areas in one operation, giving you a quick result for quality control purposes and at the same time a more realistic one, because, in wearing, all of these areas are subjected to volume displacement at the same time.

It can also be useful in developing new styles, for instead of giving out stockings to a number of girls, for test of fit, this form can be used for developing the fit of a new style in a much shorter time and hence this checking on the form will save valuable time.

The form can also be used in testing both full-fashioned and seamless nylon stockings.

The Committee believes this to be one of the most valuable tools ever made available to our industry and heartily recommends it for your serious consideration in your operations.

The Third Annual Supervisor's Seminar, sponsored by the National Association of Wool Manufacturers, was divided this year into six sessions, held in four cities — Chicago, Ill.; Worcester, Mass.; Chattanooga, Tenn.; and Philadelphia, Pa. A total of 600 supervisors from 64 mills attended the sessions. Highlights from the carding and spinning sections of the Seminar are given on this and the following three pages.



DOFFER COMB must be kept as high as center of doffer, or higher, when conversion is made to large-diameter doffer.

Wool mill men discuss

Carding

Large Doffers. The use of large-diameter doffers, particularly on finisher cards, has been common in Europe for years; and is becoming accepted in this country. One American machinery manufacturer now puts 48-inch finisher doffers on all new cards, and has installed about 250 large doffers on existing cards.

Increased production of up to 30 per cent is the advantage of the large doffer. The fibers in the web are more nearly parallel and so in better condition to be divided by the divider roll (tape method), hence the card can be fed more heavily and the surface speed of the doffer increased.

One mill increased production 15 per cent by going from 36-inch to 48-inch finisher doffers, on 72-inch wide cards. This mill also salvaged old 48-, 54-, and 60-inch cylinders and converted them into finisher doffers, with equal success. In addition to increased card production, the mill claims that better spinning and improved yarn tensile strength resulted from the change to large doffers.

Another mill found that a wool-nylon blend which ran indifferently on a 36-inch doffer gave greatly improved results when a 48-inch doffer was installed, with no other changes in the card.

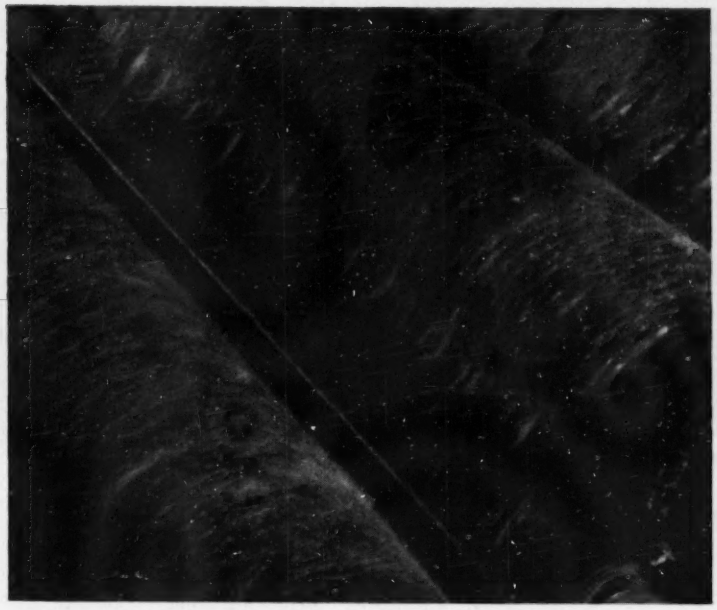
It is not necessary to recess 60-inch doffers into the floor; the doffer is elevated on the card frame so that there are four or five inches of space underneath. One worker must be removed whenever the doffer diameter is increased, because the fancy is elevated.

When a 54- or 60-inch doffer is installed, the doffer and comb are supported by a block that rests on the card frame. The proper train of gears is then placed between the doffer and condenser. The doffer gear from the 36-inch doffer can usually be rebored and used with the larger doffer, with corrections made in the gear train to obtain proper speeds.

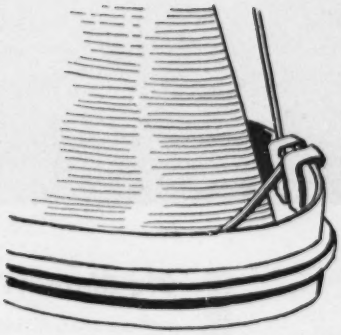
The comb must be as high as the center of the doffer, or higher. If the comb is set below center, the position of the wire relative to the comb does not permit proper doffing.

Large-diameter doffers are also considered advantageous on the breaker cards as well as on the finisher.

Excessive Waste at the Breaker Card. The representative of a mill running a fairly coarse wool told of the problem his mill has with high maintenance costs and excessive waste at the breaker cards. In some cases the yield is only 72 per cent. This mill uses a three-breaker breast, with burr-type



WIRE must be kept in good condition on the breaker card to avoid excessive waste.



TWO TRAVELERS on the same ring prevent excessive ballooning without necessity of going to a heavier traveler.

carding and spinning

licker-in, and burr guards on top. They have been unable to put a Peralta before the feed.

The consensus of the experts present was that, in addition to a good breast, the answer to this mill's problem is to install grids under the breaker card and to keep the wire in good condition. Concerning the breast, one machinery manufacturer's representative expressed the opinion that it is better to have the burr guards underneath the cylinder. This permits a wider setting and a greater difference in speed between the two, so that the rolls are easier to keep clean. Too, the burr guard can be stopped if it is underneath, and will then remove the larger pieces of trash.

When grids are used, they should not be set too near the doffer, since this will disturb the flow of stock. The grid should be set tightly between the tumbler and cylinder to prevent stock collecting there. Accurate measurements must be made before grids are installed, so that the two settings mentioned can be properly gauged.

Variable Speed Drives. Card manufacturers have under development cards that approach the "push button" stage, with several trial installations now operating in mills. These cards have an individual variable speed device on the breast, two on the center draw feed, on the fancy and doffer, between the doffer and divider rolls, and on the eccentric.

The devices are manually controlled while the card is running. They are expensive — the variable speed attachment for the finisher doffer alone costs $985 at present —but are expected to pay off in better work and higher efficiency.

Vacuum Stripping. Several of

★ ***Large Doffers***

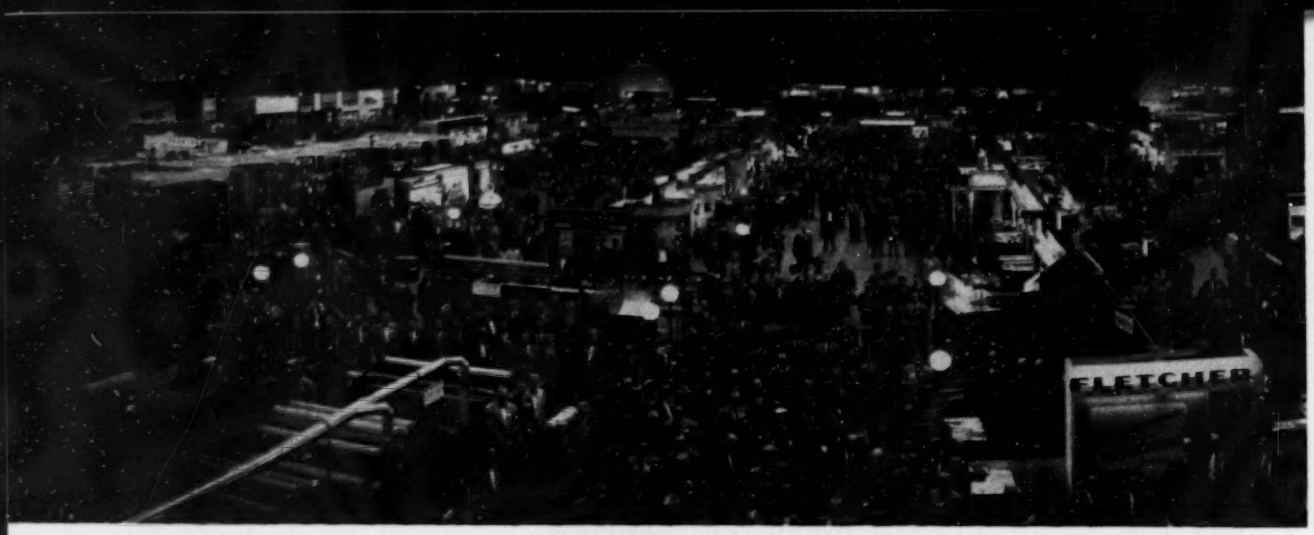
★ ***Waste***

★ ***Variable Speed Drives***

★ ***Vacuum Stripping***

★ ***Ends-Down***

★ ***Ring Lubrication***



PANORAMIC VIEW showing a portion of the main floor of Convention Hall in

Big Show Was Big Success

More than 270 exhibitors and close to 15,000 mill men and allied trade associates who attended were in agreement that the American Textile Machinery Exhibition, sponsored by the American Textile Machinery Association and held at Atlantic City April 26-30, was an unprecedented success. The amount of machinery purchased from the floor and the number of survey commitments made were considerably above the record of the 1950 Show.

Particularly evident among the textile industry personnel in attendance was the preponderance of mill executives —top officials, superintendents, and others with an important voice in mill buying policies. Souvenir hunters and the merely curious were at a minimum.

The chief complaint raised by exhibitors was leveled at certain groups of foreign visitors to the show, who spent considerable time industriously sketching and photographing new machinery on display, even going so far in some cases as to make careful measurements of machine parts. Suppliers doubt that this close scrutiny was prompted by intended purchases of American machinery.

Keeping the Show open until 10 PM on Wednesday night was criticized by many exhibitors, who found that crowds dwindled considerably after about 7 PM. Some suppliers suggested that machinery should be stopped for an hour each day at the next Show, to permit the quiet discussions which are difficult to hold above the hum and clatter of a hall full of looms, spinning frames, and almost every other type of textile machinery. Much of new machinery displayed for the first time has been described in recent issues of TEXTILE INDUSTRIES. Other new items shown will be covered in early issues.

N.L.R.B. Chairman Farmer Speaks!

"He laid it right on the line" was the expression of many textile mill executives who heard Guy Farmer, Chairman of the National Labor Relations Board, Washington, D. C., speak at the annual convention of the Alabama Cotton Manufacturers

those in attendance agreed that no significant amount of time is saved in vacuum stripping, as compared to hand stripping. It is labor saving rather than time saving, since only one stripper hand is required instead of two.

Vacuum stripping is not adapted for some wools, such as those used in paper maker's felts, where the fibers are so long and strong that the vacuum won't break the sheet on the cylinder. Long fibers wind completely around the strippers and are impossible to remove by vacuum. Removal from the workers is also especially difficult.

Grease wools can not be stripped successfully by vacuum. Hand stripping is necessary to remove the grease.

One mill in Massachusetts vacuum strips in an unusual way. This mill has pits underneath the cards, and strips the cylinders and doffers from there. Stripping is started at the first breaker. The second breaker is not run out; the ends are allowed to run down on the finisher, which is stripped while it is running. As soon as the first breaker is stripped, two or three washers are put on the scale pan. The length of time to leave the washers on the scale pan is a matter of experience. A few ends come down as the finisher is stripped, but the tender immediately replaces them. The set is back to weight and running in a total of three minutes.

Spinning

Spinning Ring Lubrication. Several delegates reported on their experience with both grease and oil for lubrication of spinning rings. Oil is generally preferred for the average type yarn. Grease gives better lubrication of large rings, where high traveler speeds cause

Atlantic City, N. J., during the American Textile Machinery Exhibition, April 26-30, 1954.

Association in Biloxi, Miss., recently. A few excerpts from his remarks are presented here:

. . . the N.L.R.B. is not and should never be thought of as a political organization or an instrument of partisan politics. The board has no hand in forming the administration's labor policy. We administer a law enacted by Congress and our obligation is to enforce that law to the letter with scrupulous adherence to the intent of the Congress . . . .

. . . If Unions or employers run afoul of our processes, they will receive fair play and equal treatment, and let it be clearly understood that the equipment in my office in Washington does not include a can of whitewash. . . .

. . . The one thing that this nation needs more than anything else, in my opinion, to maintain its strength and vigor, is a revival of interest by local governments in tackling and solving the problems of local people. That is why I strongly advocate a gradual but marked withdrawal of the hands of N.L.R.B. from local labor disputes. . . .

. . . Perhaps the greatest menace to our industrial society today is the Communist influence in labor organizations . . . It will never do to underestimate a Communist. He reaches a position of power in a trade union because he is a hard worker. He is a dedicated man. He attends all meetings while the other fellows play golf or stay at home, and he devotes himself to the job. He carefully avoids preaching his doctrine; he lives it, instead. . . Communism in labor unions can be destroyed only if attacked on a broad front, and this is a crusade which demands the active support of every loyal American. . . .

. . . Labor problems . . . rise between an employer and his employees and this is where they must eventually be settled. They can't be settled anywhere else satisfactorily. . . .

. . . if employers and unions alike would start out by truly accepting the principles and practices of collective bargaining which are written into our Federal law or the law of the land, the area of potential labor disputes would be substantially narrowed. By like token, when this occurs the National Labor Relations Board will have a great deal less to do and this will make me happy and should make everybody happy.

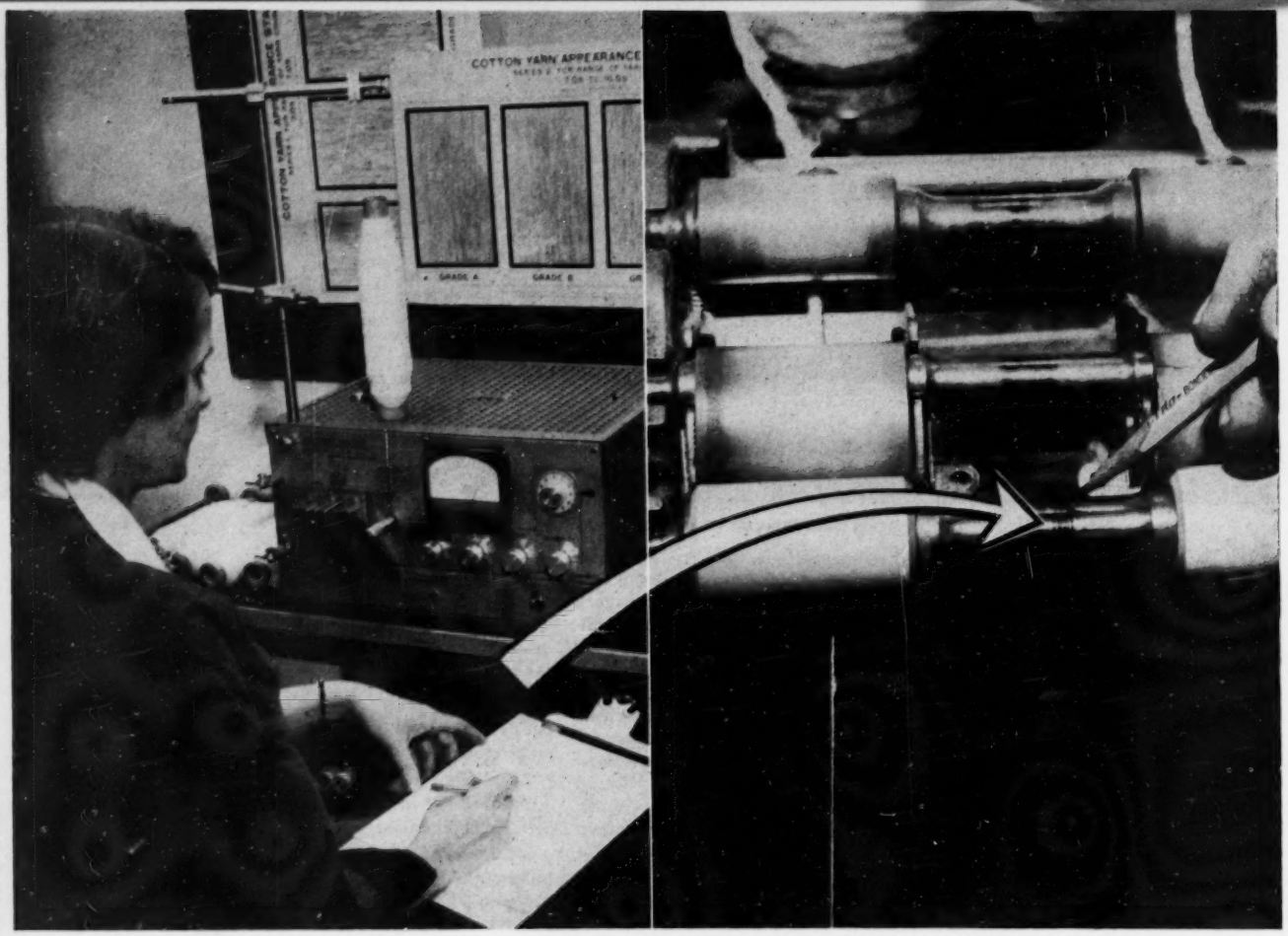
excessive wear. Where grease is used, a ring with a grease groove is advisable.

Self-lubricating rings are a worth-while investment, and four-spot rings will have a considerably longer life than one- or two-spot, while making a higher spindle speed possible.

Ends-Down. The problem of ends-down at the nip of the front rolls, caused by the full twist not running above the thread guide, aroused considerable discussion. In spinning heavy yarns a large diameter pigtail is desirable, since the twist can then get through the pigtail to the nip of the front roll. A porcelain guide offers less frictional resistance than does a steel one. Using the lightest possible traveler will also permit more of the twist to run through to the front rolls. (A possible solution to the problem of ends-down between the thread guides and front rolls in cotton spinning is described in TEXTILE INDUSTRIES, May, 1954, beginning on p. 96.)

To prevent excessive ballooning without going to a heavier traveler, the session chairman suggested using two travelers on the same ring. The yarn is threaded through one traveler, which pushes the other around the ring. This method uses two narrower travelers, which follow the contour of the ring better than one wide traveler. The use of two travelers also eliminates the problem of snarls which form when the frame is stopped on fine yarns with high twist. A slight increase in twist (about 0.2 turn) results when two travelers are used.

To prevent ends-down on start-ups of frames with large diameter rings, the frame should be stopped on the small part of the bobbin.



Pinpoint Bad Spinning!

EXCLUSIVE

By Jim Wheeler
Canton Cotton Mills

FOR the past few years, Canton Cotton Mills, Canton, Ga., have been attempting to control the uniformity of yarn by making various tests with an electronic uniformity analyzer and utilizing this information in correcting irregularities in the production machinery. Considerable success has been achieved in this undertaking.

Many tests have been made on drawing sliver. Also many checks have been made on card sliver, roving, and yarn. During these tests it was found practical to test drawing sliver from each delivery. This could be done daily when necessary, but the yarn testing was difficult to perform in the spinning room where thousands of spindles are doffed every few hours. Although many tests were made on the yarn, the procedure appeared only to "scratch the surface."

Testing Procedure. Upon consideration, the problem was approached by testing five frames of 216 spindles each or a total of 1080 spindles. This test should produce a representative number of spindles to check for defects, and the information could be used in checking the other frames in the room.

Since each side of a frame has 108 spindles, each bobbin was numbered from 1 to 108 with chalk as it was doffed. Bobbin No. 1 was always on the gear end of the frame. These 108 bobbins were then tested on the Brush analyzer. The test information was summarized, and all the deliveries which were above the average of defects were plotted in red (broken line at top of chart); all below the average were plotted in black (solid line beneath broken line).

Fixer Checks. The deliveries in the red were checked over by the fixer, and a record was kept of what was found wrong with each spindle. An immediate follow-up

was made with a repeat test on this side. The initial test was made on the first doff in the morning. This procedure permitted time to transmit the information to the superintendent and overseer who could have the spindles marked in the red to be checked over and a repeat doff of samples taken from this side the same day.

Defective Spindles Noted. The same procedure was followed until the 1080 spindles were covered. The resultant information was then summarized. Out of 1080 spindles checked, 554 were above the average in defects and were marked in the red. Of these 554 spindles, the fixer found something wrong with 308. The five factors making up the majority of the defects were: choke in apron, defective top apron, defective cradle, defective top roll, and bent saddle.

DEFECTIVE SPINDLES

DEFECT	NO. SPINDLES	PER CENT
Choke in apron	94	30.5
Defective top apron	68	22.2
Defective cradle	51	16.6
Defective top roll	29	9.4
Bent saddle	29	9.4
Long draft needed cleaning	14	4.5
Roller out of line	8	2.6
Trumpet out of line	7	2.3
Finger bar out of line	5	1.6
Defective bottom apron	1	.3
Traveler worn	1	.3
Worn saddle	1	.3
	308	100.0

PER CENT NON-UNIFORMITY

FRAME NO.	NO. SPINDLES	1ST TEST	2ND TEST
15 West side	108	102.7	101.7
15 East side	108	90.2	86.3
16 West side	108	101.2	93.5
16 East side	108	94.4	89.6
17 East side	108	94.9	89.2
17 West side	108	87.6	90.2
18 East side	108	91.7	86.6
18 West side	108	88.0	83.5
19 East side	108	86.8	83.2
20 East side	108	86.1	84.1
		92.6	88.8

4% Improvement noted

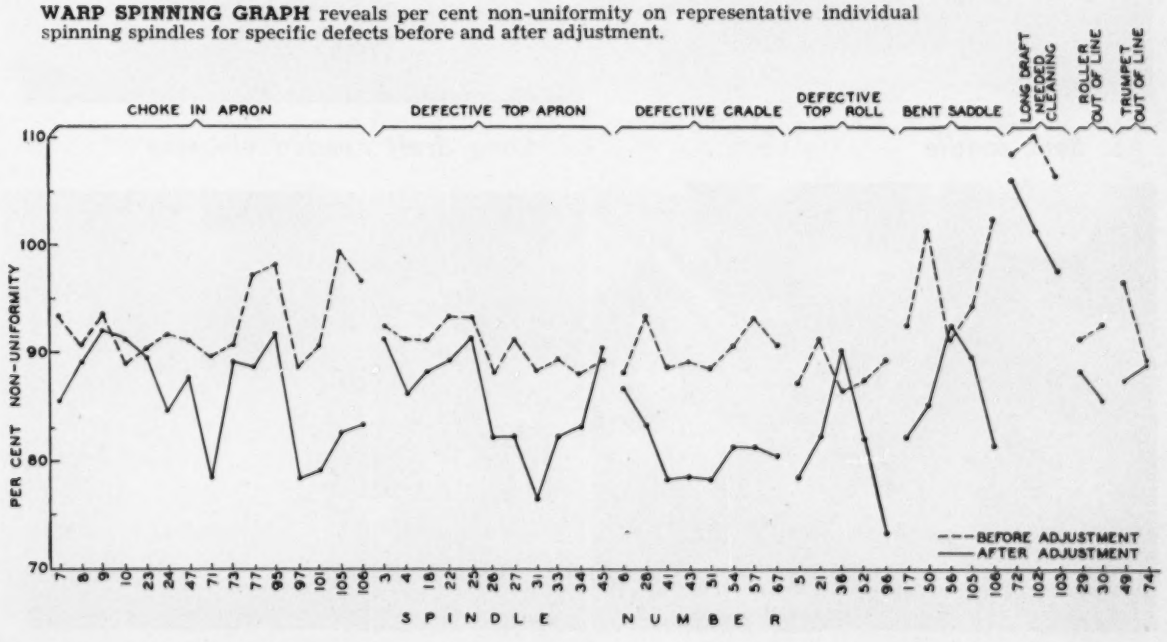
Improvement Noted. The repeat test made on this job showed an overall 4.1 per cent decrease in non-uniformity and a 717 per cent decrease on the spindles that were worked on. This should help uniformity in subsequent processes, including winding, warping, and on through weaving.

Following the survey, the entire spinning department was checked over for these defects on a systematic basis. After this, spot checks were made over the entire room to see if the defects were remedied.

The accompanying tabulation shows the defective spindles found at the time of the initial check. Another check at a different time might reveal other defects, inasmuch as defects would vary from time to time with the condition of the frames. The defects would also vary among mills. For this reason, each mill must determine its own defective spindles and work from information secured about these spindles, rather than trying to follow what some other mill has found to be its trouble.

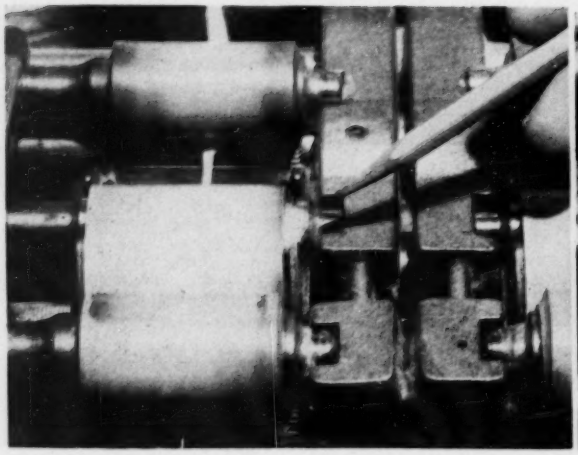
Photos on next two pages show causes of defective spinning ➧

WARP SPINNING GRAPH reveals per cent non-uniformity on representative individual spinning spindles for specific defects before and after adjustment.

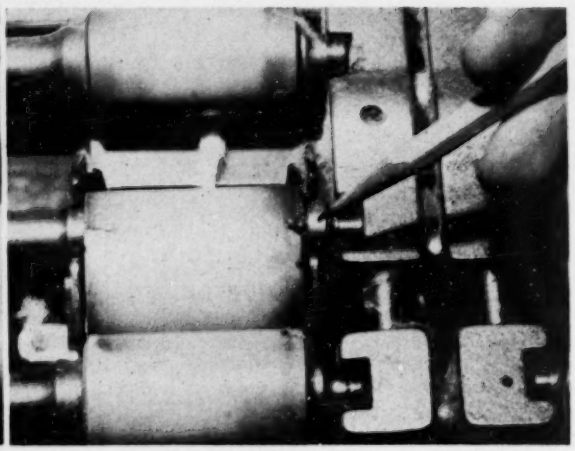


Here are the causes of defective spinning

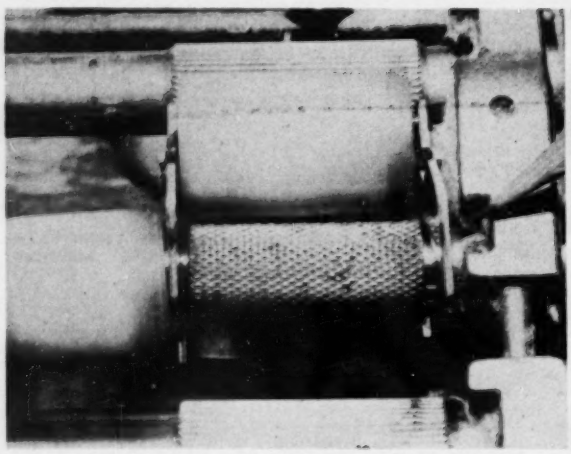
1. Choke in apron



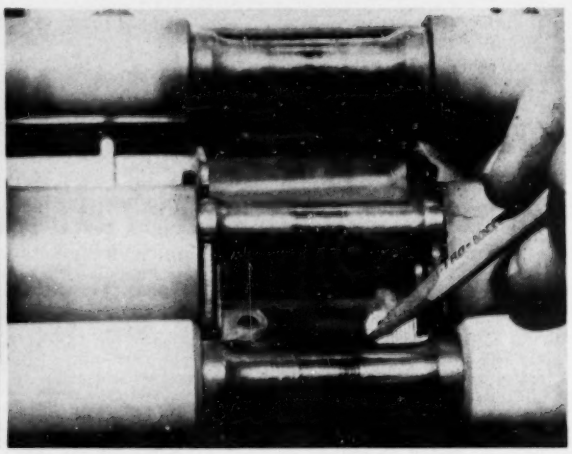
2. Defective top apron



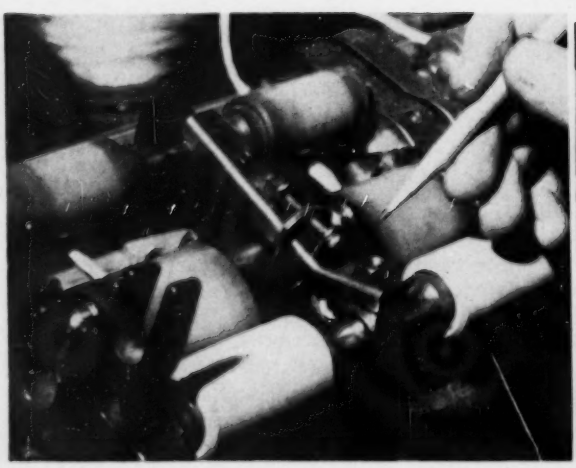
3. Defective cradle



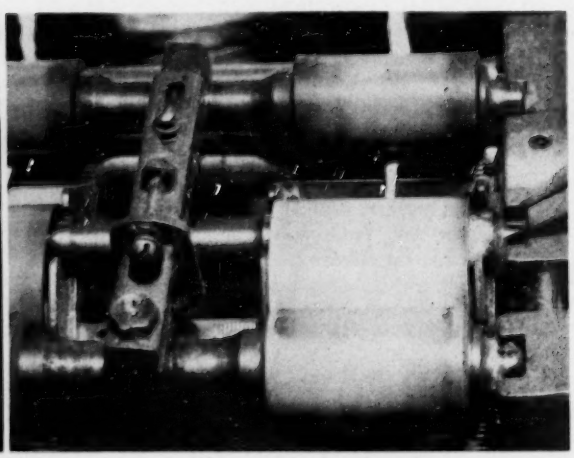
4. Defective top roll



5. Bent saddle



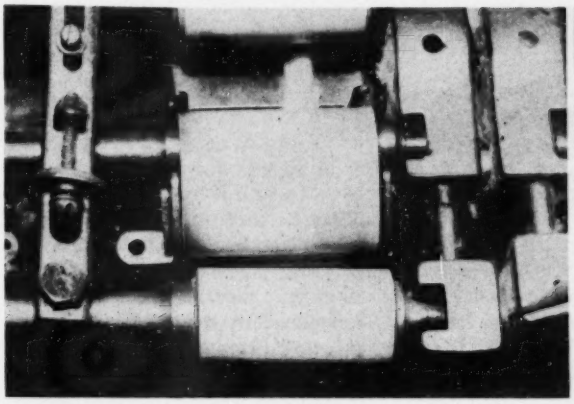
6. Long draft needed cleaning



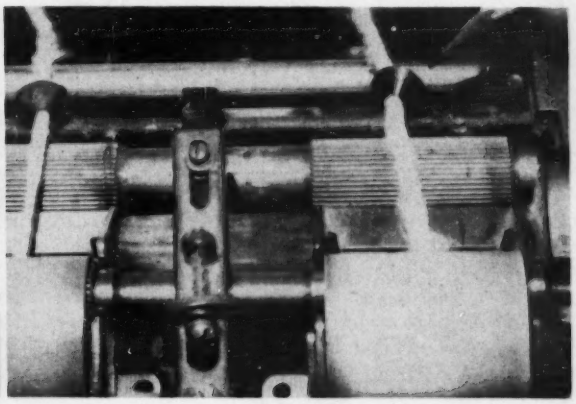
in order of frequency found at Canton

Continued from preceding page

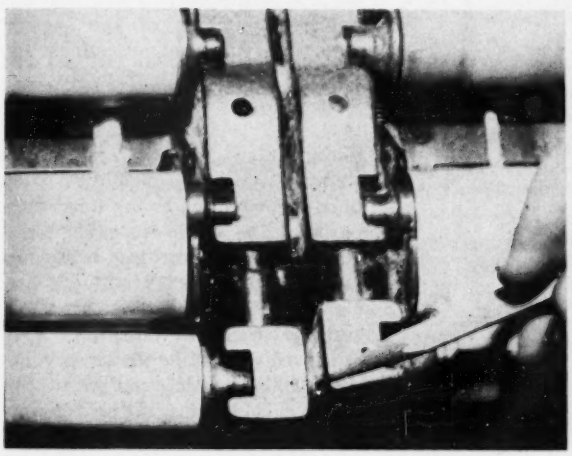
7. Roller out of line



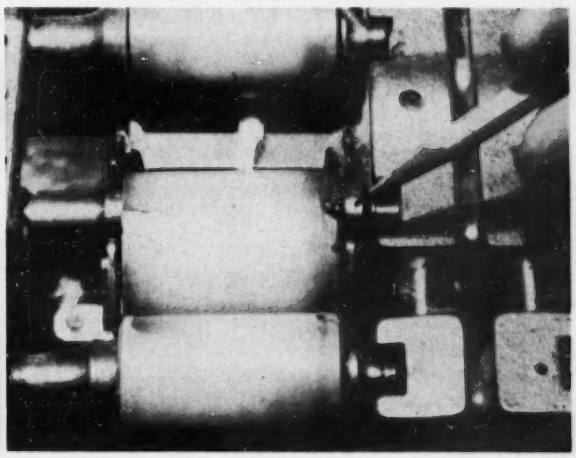
8. Trumpet out of line



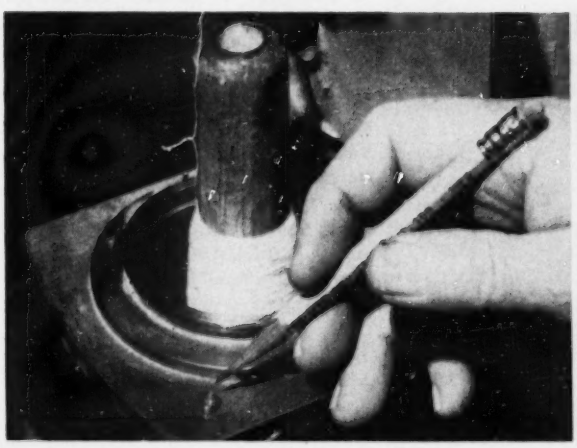
9. Finger bar out of line



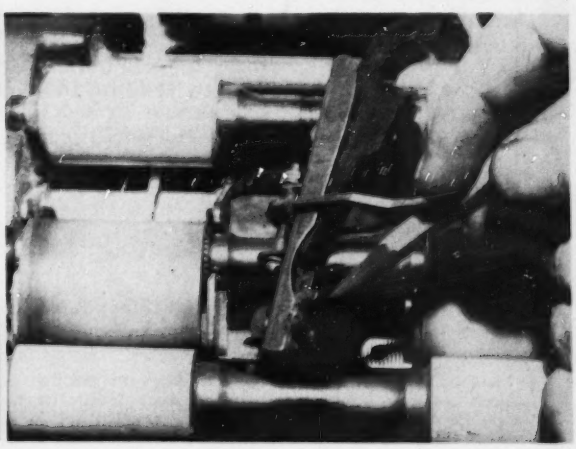
10. Defective bottom apron
(like top apron shown here)



11. Traveler worn



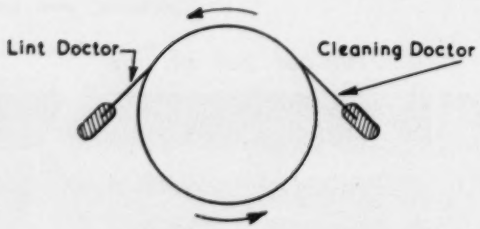
12. Worn saddle

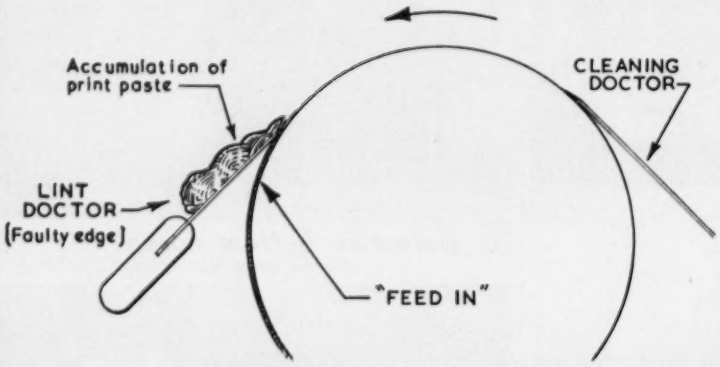


Get the most

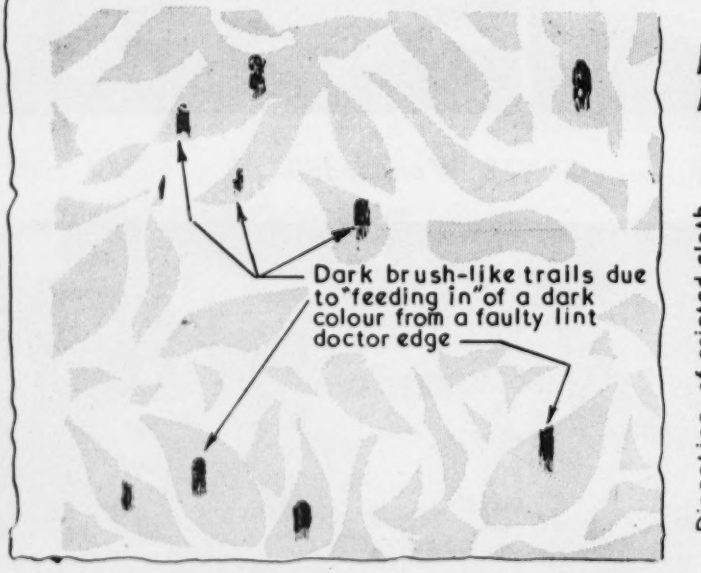
By Richard Carter
(*England*)

EXCLUSIVE





EDGE OF LINT DOCTOR must be set on the roller at an angle to clean efficiently without the risk of catching or "dipping" in the engraving, thus leaving a scar on the roller. Lint doctor removes scum of print paste to prevent mixture with fresh paste being applied to roller. The cleaning doctor cleans the roller just prior to the application of the print paste to the cloth.



LINT DOCTOR may serve to prevent soiling of light colors by residues of print paste carried over from the moist printing impressions of a darker color when several colors are printed simultaneously.

THESE observations were made from time to time in actual printing practice and should help to clarify several points which are not generally dealt with in textile printing literature.

Function of "Lint" Doctor. The "lint" doctor blade has a different function from the cleaning doctor. The latter cleans or scrapes the surplus print paste from the unengraved surface of the copper rollers so that just enough is left in the engraved portion to produce a well-defined printing impression. At the same time, the plain surface is kept clean to assure that no scum or film of print paste is conveyed to the unprinted parts of the cloth from the plain surface of the printing roller. In performing this function, the cleaning doctor edge is set at a suitable angle on the roller surface with the direction of revolution of the roller *away* from the edge. The cleaning doctor is kept in close contact with the roller surface by means of a system of levers to which springs or weights can be attached.

The edge of the lint doctor, on the other hand, works *against* the revolution of the roller and serves two purposes in so doing: (a) clears the roller from lint or fluff accumulated from the cloth surface in printing; (b) removes the scum or film of print paste from the roller surface to prevent it from entering and mixing with clean print paste being printed by the roller on which the lint doctor is acting.

The scum or film referred to in connection with the lint doctor is slightly different from that which is cleared by the cleaning doctor. In the latter case the cleaning ac-

from Lint Doctors, Mr. Printer

tion is related only to one particular print paste supplied to the roller, and the cleaning action takes place immediately prior to the application of the print paste to the cloth, during the revolution of the roller.

The action of the lint doctor, on the other hand, comes into play when the roller has performed its function of printing and in so doing has come into contact with the fresh, moist, printing impressions of colors applied to the cloth by previous rollers. This contact, it is obvious, will soil the plain surface of the roller on which the lint is acting. The surface will be soiled by accumulated and multi-colored film, depending upon the number of colors which have been printed by the preceding rollers. The second function of the lint doctor is to deal with this film.

Setting Lint and Cleaning Doctors. It is generally agreed that preparing and setting the doctors is perhaps the most important of the printer's duties. While there are machines which can do part of the work involved, it will also be conceded by those who have experience that the various gradations and settings of edges required for different styles of printing can only be obtained by hand-filing and honing.

There are three main types of edging which may be produced by hand-filing; two wrong, and one right: (a) bevelled on both sides of the blade; (b) long bevel on one side—short bevel on the other; (c) long bevel on one side only. Of these only (c) is right, if the blade is to function efficiently. If an edge is bevelled on both sides there is a special reason.

In one instance a printer was accustomed to "take the roughness off the edge" of the blade prior to honing, by running his file along the top of the blade in such a way as to produce a slight bevel on the wrong side. Needless to say, the cleaning properties of the blade were impaired, with the result that soiled and scummed prints were common faults at this particular machine until the cause of the trouble was located and remedied.

The cleaning or shearing action of such an edge will be greatly impaired because of the fact that it will very quickly wear down by contact with the engraving as the roller revolves in printing. The doctor blade, in fact, must act like a knife on the mass of the print paste supplied to the engraved roller from the color-box by the brush furnisher, so that the unengraved surface of the roller is completely cleared of print paste, as previously explained. Where the flow properties of the print paste and the edge of the cleaning doctor coincide in their efficiency a perfect printing impression results.

In cases of difficulty the printer often attempts to remedy the situation by putting more pressure on the edge of the blade to make it clean better. This has several bad results: (1) a speedier wearing away of the edge with consequent impairment of its cleaning efficiency; (2) wearing down of the engraving (after a time) and resultant production of poorly furnished printing impressions; (3) under such heavy pressures, if a piece of grit or sand from a faulty print paste should find its way beneath the edge of the blade, it will be ground heavily into the roller surface, with consequent damage which may take a considerable time to repair.

Lubrication of Lint Doctor. As already mentioned, the lint blade has a major function to perform in keeping print colors free from "soiling" by preceding dark colors in the printing sequence. A point worthy of emphasis is that the edge and face of the lint doctor blade will need some sort of lubrication if this piece of printing equipment is to perform its function adequately.

The object here is to enable the surplus print paste accumulated on the edge of the lint to flow freely down the face of the blade and to one side of the printing machine by means of a trough or duct fastened beneath the lint. One way of doing this job of lubrication is very simple; when the machine stops for any reason, e.g. putting up a fresh batch of cloth or backgrey, a greasy rag (kept for the purpose) is wiped along the raised edge of the lint.

This has a two-fold action: In the first place the cleaning edge of the lint is cleared of all accumulated print paste and has its efficiency renewed. Second, the face of the blade is lubricated so that the accumulation of print paste flows down freely into the aforementioned duct.

In many instances this flowing action can be assisted by adjustments to the print paste either in the form of lubricants such as pine oil emulsions, an emulsion of whale oil and oleine (1:1), or a suitable solvent for the dyestuff. One remedy is to use a thin print paste where possible.

Placing Lint Doctors and Brush-Furnishers in the Printing Machine. This is a problem which varies with almost every pattern which requires this type of treatment. Some of the factors to be considered by the printer in any particular case are: (1) number of colors to be printed; (2) placing of these in the machine to get the best results; (3) size of the printing rollers; (4) type of pattern; (5) size of nips, or distance from one roller to another when placed in the machine.

In almost every case of a multicolor print the intelligent use of brushes and lints will help in pro-

ducing colors true to shade and free from contamination by other colors. In the actual placing of the lints the size of the rollers is a factor of major importance. In some instances the roller diameters may be so small as to preclude the use of a lint or at least make it a matter of some difficulty.

The edge of the lint must be set on the roller at an angle to clean efficiently without the risk of catching or "dipping" in the engraving of the roller. If the diameter of the roller is too small, placing the lint at a suitable angle will often be out of the question apart from the problem of space for fitting the necessary screws and brackets. When the angle of the edge of the lint in relation to the surface of the roller becomes too obtuse, it becomes impossible to put any pressure on the edge without increasing greatly the risk of dipping and tearing-up the engraving.

Where there is even a tendency in this direction the wear on the engraving will be considerable. This in turn will result in the production of poor and poorly furnished printing impressions, particularly where large masses of color are being applied.

Feeding-In Print Paste from Faulty Lint Doctor. The common function of the lint doctor blade is described as the clearing of the roller surface (the unengraved parts) from fluff, etc., collected from the cloth surface as the latter passes through the nips of the printing machine. The objective is to prevent such foreign matter from entering the print paste in the color-box or from thence beneath the cleaning doctor-blade edge with resultant print damages.

In addition to this simple function, the lint doctor can act to prevent soiling of light-colored print pastes. As well as clearing the unengraved surface of the roller from lint and fluff, the edge of the lint doctor will also catch and retain the slight film of print paste which is left on the plain surface of every printing roller. This is a very important factor when it is considered that a dark outline print paste has often to be printed in prior sequence to a light-colored print paste, in order to obtain a clear definition of the outline which may be impinging or even "falling-on" the impression of the light color.

If in such circumstances a lint doctor can be worked in conjunction with the roller bearing the light-colored print paste, then it becomes possible to use the lint doctor to prevent soiling of the light color by residues of print paste carried over from the moist printing impressions of the dark outline. These residues are usually picked up by the plain surface of the roller printing the light color.

The lint doctor must function equally well at every point. Otherwise, the faulty portions of the edge will allow color or print paste to pass and mingle with the light color in the color box. If one side of the lint doctor blade is slack or badly adjusted to the roller surface, then soiling of the light color will take place on the slack side. This will result in a gradual and increasingly marked difference in the shade of that particular color from one side of the printed piece to the other.

Another form of feed-in may be described as follows: The print paste in this instance shows evidence of the fault known as "sticking-in." This is the result of a settlement of insoluble residues from the print paste in the engraving incisions of the roller. Where this occurs there will also be a deposit of scum or film on the roller surface which the lint doctor should remove.

Such deposits tend to accumulate at faulty portions of the lint doctor edge where the cleaning function of the edge is obstructed. This type of accumulation then mounts up at the affected part of the blade and will eventually work its way beneath the edge at these points, by the revolution of the roller against the edge of the lint blade. The tendency then is for such deposits to become lodged in the engraving of the roller which the lint blade should protect. The result will in all probability be dark streaks of black, brown, or navy through a light colored blotch ground.

This fault will usually become obvious to the printer almost immediately and can sometimes be cured by tightening the brush furnisher or by cleaning the lint doctor edge. Where these remedies do not suffice, an addition of a dyestuff solvent to the print paste will often result in a cure by keeping the dyestuff in a more soluble condition.

Trouble with "Cutting-Guides" and the "Lint" Doctor. In printing handkerchiefs, head-squares, and tablecloths, one of the necessary details is the instructing of the cutting-guides on the engraved rollers. These generally take the form of a series of dots about the size of a pin-head on one of the rollers bearing a dark print color so that the guides can be seen easily and followed by the cutter when preparing for hemstitching. The objective in using a roller bearing a dark color is obvious. Since this is usually the outline roller of the pattern, the guides are usually engraved on this roller.

On the other hand, where there is no outline or where there is a wide colored border, the engraver may decide to leave the cutting guides as plain or unengraved spots suitably spaced in the colored border roller. In one particular case this gave rise to difficulty in the use of a lint doctor.

It was found necessary in this instance to use a lint doctor along with a brush-furnisher to keep clean the print paste being applied by the hem roller. The brush furnisher helps in two ways: (1) by keeping the engravings clear of any deposits of dark colored and precipitated print paste carried over from other rollers; (2) mixing-in any small amounts of such carry-over so that they mingle evenly with the rest of the color in the color-box and soil this as little as possible.

A brush furnisher should not be any longer than is necessary to furnish the engraving with print paste. Very long furnishers tend to circulate the print paste at the ends of the color-box so that mixing in the center of the box does not take place efficiently.

The trouble arose because the lint doctor had a tendency to catch

at the unengraved dots in the midst of the solid engraving which formed the colored border. This was caused by the slightly raised and rough edges presented by the plain dots at their circumference adjoining the heavy engraving which surrounded them. Catching the lint in this way had two results: (a) slightly raising the edge so that collected film or scum escaped the cleaning effect of the lint and soil the light print paste of the hem roller; (b) a greatly increased risk of the lint itself catching or dipping into the engraving with drastic consequences in the form of damage to the roller and other adjacent printing equipment.

The first attempt to solve the problem was to dispense with the use of the lint, but the possibility of soiling was so obviously present that this idea had to be discarded. A solution was eventually found by merging the plain dots into the engraving of the hem roller and engraving new cutting-guides on one side of the rollers printing a dark color, so that the new dots showed through the light colored border in the same relative positions. In this particular instance the white cutting-guides in the hem would have served their purpose perfectly well had the use of a lint doctor not been absolutely essential.

Chromium Plating. The use of chromium plated rollers in textile printing has become more widespread in recent years. The reasons are that print damages are greatly reduced; time in printing is saved because there is less repairing of rollers to be done; and the wear on the engravings is negligible.

On the other hand, it is plain that the hardness of the chromium finish is bound to have a bad effect on the edges of lints and doctor blades by wearing them away more rapidly. From another point of view, however, it may be noted that the cleaning efficiency of the blades can (for a time at any rate) be improved by increasing the pressure thereon without any risk of damaging the engraving.

This also means that there is less risk of soiling the unprinted parts of the fabric by the scum or film of print paste held by the unengraved parts of the roller. Furthermore, the chromium plated surface does not hold this film of print paste so readily as a plain copper surface.

In all such instances the cleaning efficiency of the blade may be improved by adding a lubricant or solvent to the print paste. As lubricants, highly sulphonated oils or emulsions thereof may serve. Thiodi-glycol may serve as the solvent. A point of disadvantage is the fact that doctor and lint blades are very speedily worn away by the edges of the chrome plated rollers. In all instances the doctor and lint blades project over the ends of the rollers to be certain the entire surface of the roller is cleaned. Otherwise, a certain amount of color or print paste would be carried onto the backgrey and printing blanket and from thence onto the drying cylinders, with resultant soiling of print goods.

Where the blades project, a portion of their edges corresponding in width to the traversing motion of the doctor blade (in the case of the cleaning doctor) is indented or worn away by the hard chromium plated end of the roller. This impairs the cleaning action of the blade. Since the wear is at the extreme ends of the rollers beyond the engraving, the defect is usually of little significance.

The real trouble from this defect lies in the fact that such doctor blades and lints (the lint does not give the same trouble as the cleaning doctor because it has no traversing motion) require much more care in filing up than is ordinarily necessary to remove the worn portions and leave a level cleaning edge. Sometimes the fault is such that the blade will have to be reversed in the doctor shears and a new edge made on the opposite side of the blade. One way to avoid this trouble is to use very hard blades with a minimum of pressure.

Course in Applied Mechanics of Textile Structure Offered at M.I.T.

A special summer program in Applied Mechanics of Textile Structures, considering both natural and synthetic fibers, will be offered from July 19 through July 30 during the 1954 summer session at the Massachusetts Institute of Technology.

The two-week program will deal with mechanical properties of textile fabrications as shown by the behavior of the individual fiber and by its structural configuration within the finished material. Directors of the program will be Professors Edward R. Schwarz, professor of textile technology, and Stanley Backer, assistant professor of mechanical engineering. There will be several afternoon seminars given by guest speakers connected with pioneer studies in specialized areas.

A variety of topics will be covered, including: the idealized geometry of twisted, woven, and knitted forms; influence of yarn twist and fabric weave on material strength and elongation; flow of fluids through textile structures; seam strength efficiencies; elastic theory of orthotropic materials and its application to textile-reinforced laminates; uniaxial and biaxial stress theory; effect of fiber orientation on properties of nonwoven fabrics; and bending and torsional behavior of yarns and cloth.

Special attention will be given to variability in fiber properties, interfiber friction, and fiber movement within the yarn structure. The relation of the structure of a fabric and its dimensional stability will be brought out, according to Professor Schwarz.

Registrants should have a background in mathmetics such as that given in an undergraduate course in science or engineering. Knowledge of strength of materials and textile technology would be useful but is not essential. Tuition will be $140; academic credit will not be offered. Full details and applications blanks may be obtained from the Summer Session Office, Room 7-103, M.I.T., Cambridge 39.

Study of Personnel Practices of Southeastern Textile Mills Resulted in These Major Conclusions

Spinning and weaving mills in the Southeast as a group have fuller and more varied personnel programs than do other types of industrial plants in the area.

Factors with the most important influence on personnel practices are number of employees, presence or absence of a personnel department in the mill's set-up, and whether or not the mill is unionized.

Unionized plants are more likely to have personnel departments with full-time personnel workers than are non-union plants. They lead in most employee benefit programs, but the difference is not as great as might be expected.

Mills which encourage attendance at personnel conferences are likely to have comprehensive personnel programs; mills that send representatives to the annual Southern Industrial Relations Conference carry on more varied programs than those that do not.

HOW DOES YOUR PERSONNEL PROGRAM SHAPE UP?

By H. Ellsworth Steele, W. R. Myles, and Sherwood C. McIntyre
Alabama Polytechnic Institute
Auburn, Alabama

EXCLUSIVE

MEN who hold positions of responsibility are usually interested in how others go about solving the problems which they themselves face. For this reason, men who make personnel policy in spinning and weaving plants in the Southeast may find value in a study of personnel practices in their industry within the region. They may ask how extensively selected personnel practices are used. What effects do plant size, unionization, and the presence of a personnel department have on personnel practices? These and other questions are considered in this article.*

"What others are doing" is only one of a number of measures available to judge a firm's personnel program. Other methods include: a summary of the work accomplished, an estimate of the tangible savings made, a morale survey, interdepartmental comparisons within the firm, observed improvements in productivity, and the meeting of policy objectives.[1] Thus, prevailing practice is not the only standard; indeed, it is not always a sound standard. Never-

These Personnel Practices Are More Common in Spinning and Weaving Plants of the Southeast Than Industry as a Whole:

Interview job applicants.

Have minimum and maximum hiring ages.

Use piece rates or other incentive plan.

Have a job evaluation program.

Consider seniority in promotions, layoffs, etc.

Usually work more than one shift.

Have a personnel department, training program, and safety program.

Give "exit" interviews.

Have a grievance procedure.

Do personnel research (reasons for personnel turnover, etc.).

Use outside consultants in personnel program.

Provide food service for employees.

Have a group insurance plan or plans.

Have a pension plan.

Rent company houses to employees.

These Practices Are Less Common in Spinning and Weaving Plants Than in General Industry:

Employee merit rating systems.

Use outside consultants in personnel program.

Unionization.

Have an employee credit union.

theless, it should always be considered.

Introduction

The present study focuses on 104 spinning and weaving plants[2] in Alabama, Georgia, North Carolina, South Carolina, Tennessee, and Virginia. Practices in these selected plants are compared with those prevailing in 602 establishments in all types of industries scattered throughout the Southeast from Maryland to Louisiana. In the spinning and weaving plants alone approximately 139,000 operatives are employed. In the larger group, which includes the spinning and weaving plants, nearly one-half million operatives are found.

The plants surveyed were those sending representatives to the 1951 Southern Industrial Relations Conference in Blue Ridge, N. C., and those listed in the 1952 issue of *Industrial Alabama* as employing 50 or more operatives.[3] Of the 161 spinning and weaving plants which were sent questionnaires, 104 (65 per cent) responded. Of 1,088 plants in all industries which were sent questionnaires, 602 (55 per cent) returned them. Analysis of the returns reveals that size had little effect on response among plants employing up to 999 operatives. There was a greater response, however, from plants employing 1,000 or more operatives than from the smaller plants, which gives the larger units fuller representation in the sample.

The spinning and weaving plants range in size from 80 to 12,000 employees. The median number of employees is 822. The 602 plants in all types of industries employ from 2 to 29,000 operatives with a median number of 192. The textile plants thus emerge as substantially larger than the average industrial plants, but with no units so small or so large as some of the plants in other industries surveyed.

How Widely Are Selected Personnel Practices Used?

Included in the questionnaire sent the cooperating firms were 29 questions about different personnel practices. Several of these carried subparts. Their exact wording is included in the charts which follow.[4] The practices studied fall into four broad areas: employment, wages and salaries, communications and related policies, and employee benefits.

Employment practices. A substantial majority of the spinning and weaving plants, and of all the plants surveyed, use each of the five selected employment practices, except tests in hiring, as Figure 1 reveals. Fewer than one-fourth of the spinning and weaving plants and fewer than one-third of all plants use tests. The textile plants make substantially greater use of application blanks and of hiring age limits but less use of tests, as has been indicated, than do the plants in all industries studied.

Tabulations of the detailed answers to the hiring age question show minimum hiring ages from

[2]This study was made possible through an Alabama Polytechnic Institute research grant-in-aid. A companion article on knitting plants in the Southeast will appear in an early issue.

FIGURE 1. Use of Selected Employment Practices by Spinning and Weaving plants and by All Plants Surveyed

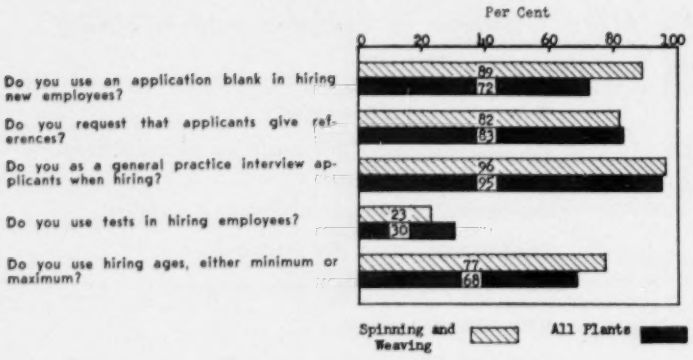
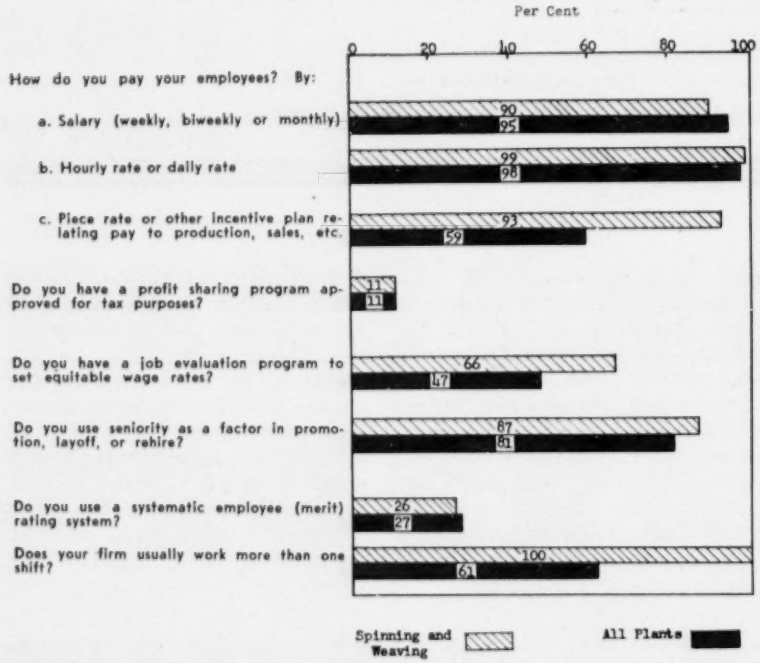


FIGURE 2. Use of Selected Wage and Salary and Related Practices by Spinning and Weaving plants and by All Plants Surveyed



16 to 18 for manual operatives and from 16 to 21 for "other workers." Of the plants with established minimums, approximately two-fifths use 16 years as their minimum and three-fifths use 18. Higher minimums are rare. Two-thirds of the plants responding declare that they have no maximum hiring age. Some plants turn operatives away, however, if they are 35 years old. More than one-tenth of the plants report maximum hiring ages of less than 50 years, and more than one-fifth give maximum hiring ages of less than 55 years. A number of respondents temper their answers with such comments as: "depends on the nature of the job," or "common sense." Nevertheless, the preference for younger men is quite clear. This preference may be due in part to the growing use of pension plans, but whatever its cause, it poses a real problem for older persons seeking employment in this industry.

Wage and salary and related practices. A majority of the textile plants use each of the wage and salary and related practices covered in Figure 2 except profit sharing and merit rating. Nearly all of the plants use each of the three traditional ways of paying employees. Only in the substantially greater use of piece work and other incentive systems are the methods of paying employees in textile plants markedly different from that in the average plant studied. Approximately one-tenth of the plants in both groups have profit sharing plans.

Two-thirds of the textile plants, but less than one-half of the plants in all industries, report that they use job evaluation.[5] Most plants in both groups use seniority in promotion, layoff, or rehire, although not necessarily as the major factor. Roughly one-fourth of the plants in both groups use merit rating. All spinning and weaving, but less than two-thirds of the plants in all industries, usually work more than one shift.

Communication and related policies. Figure 3 presents the findings for eleven communication and related practices. Of these questions, those dealing with safety, training, grievance systems, and personnel research are especially subject to divergent interpretations because adequate definitions to guide the respondents could not be given in the questionnaire.

A majority of the spinning and weaving plants use seven of the eleven different practices covered. Three-fourths of the textile plants have full-time personnel workers and organized personnel departments. Nearly all claim safety and exit interview programs. Evidently, in some plants these programs are carried on without the assistance of specialized personnel. Approximately three-fourths of the plants have training programs, keep records of exit interviews, and have formalized grievance procedures. Approximately two-thirds attempt to interview all employees who leave the firm, and nearly as many carry on personnel research. One-third or fewer of the plants post job vacancies so that employees may bid for them, sponsor suggestion plans, occasionally interview persons leaving, are unionized in part or in whole, and call on outside consultants in the

personnel field.

In the use of all of these practices except suggestion plans, occasionally interviewing employees leaving, and collective bargaining, the spinning and weaving establishments lead the plants in all industries studied.

Employee benefits. The questions covered by Figure 4 are again subject to divergent interpretation. Further study is needed, for instance, to separate the plants with only a first aid program from those with comprehensive health and medical programs. The data as tabulated, however, show that nearly all plants in the spinning and weaving and in all industries claim to furnish some first aid, health or medical treatment and to have a group insurance program. Three-fourths of the textile plants provide some food service, and two-thirds rent some company houses to employees. Substantially fewer than one-half have pension plans, and only one-tenth have credit unions.

A greater proportion of the spinning and weaving plants than of the plants in all industries as a group use each of the practices studied except that of sponsoring credit unions. In the provision of food service and in renting houses the difference is great. It is especially noteworthy that of 100 southeastern textile plants, 64 rent houses to employees whereas of 100 plants in all industries, including textiles, only 31 rent company houses. The textile "mill village" is not yet gone.

How Do Practices In SIRC and Non-SIRC Plants Compare?

A comparison of the practices followed by the plants which send representatives to the annual Southern Industrial Relations Conferences to exchange thinking with other personnel men, and by the plants which do not, may be of interest. The significance of the comparison is limited by the fact that the two groups are not entirely comparable. The median-sized SIRC plant employs 1,040 operatives; the median non-SIRC plant, only 300. In 93 per cent of the SIRC, but in only 49 per cent of the non-SIRC plants, there are full-time personnel workers and/or an organized personnel department. These factors influence personnel practices, as will be shown later, and may account for differences between the two groups of plants. *(Continued next page)*

FIGURE 3. Use of Selected Communications and Related Practices by Spinning and Weaving Plants and by All Plants Surveyed

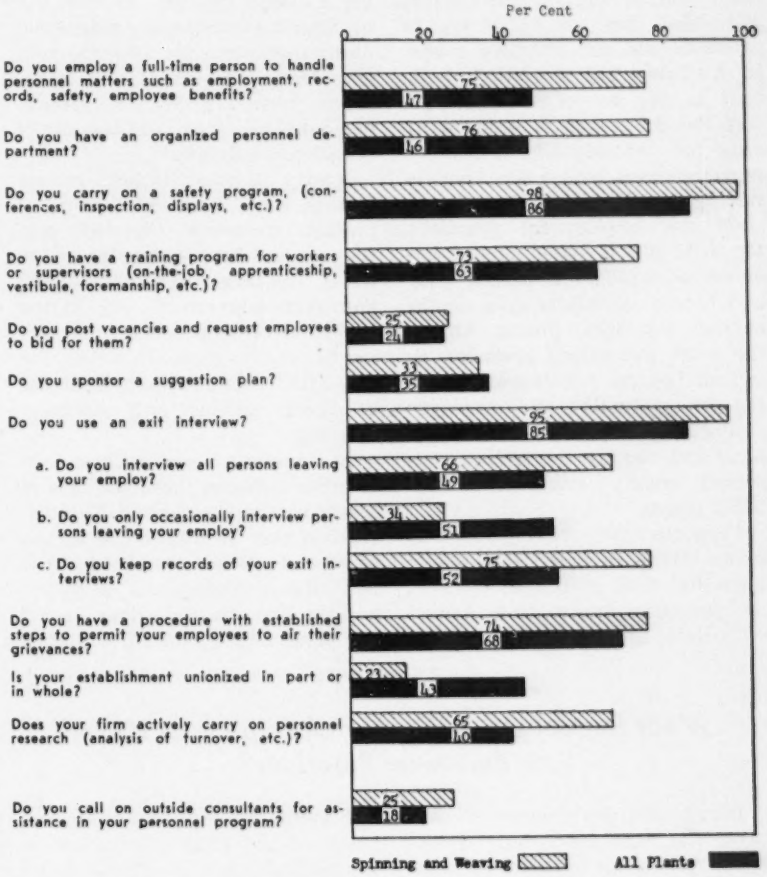
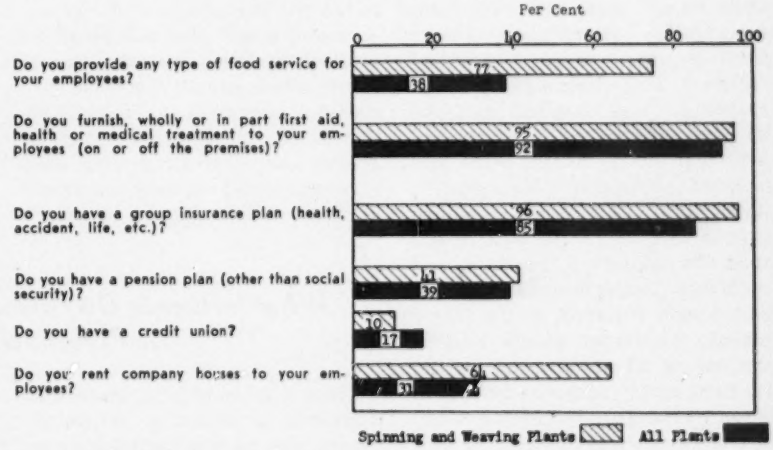


FIGURE 4. Use of Selected Employee Benefit Programs by Spinning and Weaving Plants and by All Plants Surveyed



A greater percentage of the SIRC than of the non-SIRC plants state that they use 25 of the 33 practices and sub-practices shown in the Table. The non-SIRC plants lead in the use of six practices, but the difference is noteworthy only for "occasionally interviewing employees who leave," and in having a credit union.

Of the employment practices, the SIRC plants make much greater use of application blanks, tests, and hiring age limits than do the smaller non-SIRC plants. Among the wage and salary practices, an especially large difference emerges for job evaluation and employee rating systems, which are technical and require the trained personnel usually available in the SIRC plants.

Proportionately nearly twice as many SIRC as non-SIRC plants have full-time personnel workers and personnel departments. Armed with these specialists, it is natural that the SIRC plants should lead by a large margin in the use of training programs, suggestion plans, interviews for all employees who leave, records of exit interviews, formal grievance systems, personnel research, and the use of outside consultants.

Nearly all plants in both groups furnish some first aid, health or medical treatment for their employees and have group insurance plans. The larger SIRC plants lead approximately two to one in the provision of food service and the use of pension plans. However, the non-SIRC plants make greater use of credit unions and company housing.

In summary, a real difference in practice between these two sets of plants is readily observed. This difference may be due to the inspiration and guidance received at the Blue Ridge conferences or to the greater size and the wider use of personnel men by the SIRC plants.

What Impact Does Number of Employees Have on Personnel Practices?

Larger plants are generally expected to have more fully developed personnel programs than smaller ones. To test this hypothesis, the textile plants were classified by size and their answers compared. For this purpose, plants with fewer than 500 employees were called "small" and plants 500 or more were considered "large." This dividing line was chosen because detailed analyses by size showed that practice appeared to change at this point, and because the American Management Association and other business groups consider firms with fewer than 500 employees "small."

In this comparison, as the third and fourth columns in the Table reveal, the larger plants lead in the use of 27 of 33 practices, tie in two cases, and nearly tie in three of the four remaining. Only in "occasionally interviewing employees who leave," do the larger plants lag substantially — because they try to interview *all* who leave.

Management representatives in large and small plants usually interview job applicants but seldom test them. An overwhelming majority of the large plants, and a substantial majority of the small ones, use application blanks, request references, and follow hiring age limits. In method of paying operatives, the only difference between the two groups is the greater use of piece rates and other incentive systems by the larger plants which usually have the specialized personnel to administer them. The larger plants make greater use of profit sharing also, although such programs are usually more successful in "smaller" firms.[6] The larger plants apparently make somewhat wider use of seniority than do the smaller. Many more of the larger plants claim to use job evaluation and merit rating, which require especially careful administration.

Nine-tenths of the larger plants, but fewer than one-half of the smaller plants, have full-time personnel workers and personnel departments. Nearly all plants, large and small, claim safety and exit interview programs. The larger plants make substantially greater use than small plants of training programs, suggestion plans, interviews for all employees who leave, records of exit interviews, personnel research, and outside consultants.

A much greater proportion of the larger plants than of the smaller ones are unionized. For this reason, if no other, the larger plants might be expected to make greater use of seniority, job posting, and grievance systems than do the smaller plants. And they do, possibly because these programs are usually stressed by unions.

Almost all of the large textile plants surveyed provide some food service for employees, furnish some type of first aid, health or medical treatment, and have group insurance plans. Only about one-half of them have pension plans, but nearly three-fourths rent company houses to employees. In each of these areas, the large plants lead the smaller ones, but by varying margins as the Table shows. Food service and pension plans apparently are most affected by size differences. Credit unions are seemingly unaffected inasmuch as one-tenth of both groups of plants have them.

What Influence Do Personnel Departments Have on Personnel Practices?

The influence of a personnel department is difficult to weigh. Plants with such departments usually carry on a wider variety of personnel functions than plants without them, as was found in this study. It may be that the specialists in the department were employed to handle all of these pre-existing functions; or that the specialists hired to administer a simple program persuaded management to undertake many of the current practices. The causal relationship probably runs in both directions.

The spinning and weaving plants with personnel departments lead

Personnel Practices in Southeastern Spinning and Weaving Mills

Personnel Practice	SIRC* %	Non-SIRC* %	Number of Employees 1-499 %	Number of Employees 500 up %	Personnel Department Present %	Personnel Department Absent %	Unionization Union %	Unionization Non-Union %
Employment practices								
Use application blanks	96	71	77	95	97	64	96	88
Request references	84	77	71	86	86	68	88	80
Usually interview applicants	97	94	97	96	97	92	100	95
Use tests in hiring	29	11	19	25	28	8	21	24
Use hiring age limits	83	65	65	82	82	60	83	75
Wage and salary and related practices								
Pay some workers by salary	89	93	91	90	90	90	90	90
Pay some workers by hour or day	99	100	100	99	99	100	100	99
Pay some workers by piece rate or incentive system	96	88	86	96	92	96	100	91
Have a profit sharing program	12	9	6	12	9	12	4	13
Use job evaluation	74	51	52	72	74	44	67	66
Use seniority in promotion, layoff, rehire	91	80	84	89	91	76	96	85
Use employee rating system	30	15	20	27	28	17	13	29
Usually work more than one shift	100	100	100	100	100	100	100	100
Communication and related practices								
Have full-time personnel workers	91	43	45	88	96	8	88	71
Have an organized personnel department	91	46	47	88			88	72
Carry on a safety program	100	94	94	100	100	92	100	98
Have a training program	84	51	55	81	85	36	75	73
Post job vacancies for bidding	24	29	13	31	29	16	75	10
Sponsor a suggestion plan	38	23	23	37	37	20	29	34
Use exit interviews	99	89	90	97	97	88	96	95
Interview all employees leaving	71	57	61	69	72	50	64	67
Occasionally interview employees leaving	29	43	39	31	28	50	36	33
Keep records of exit interviews	85	52	52	84	81	52	91	70
Have a formalized grievance procedure	79	63	68	76	83	48	92	68
Unionized in whole or in part	23	23	10	29	27	12		
Carry on personnel research	78	36	37	76	82	13	70	63
Employ outside consultants	28	17	13	29	29	12	26	24
Employee benefit programs								
Provide food service for employees	91	49	48	89	85	52	83	75
Furnish some first aid, health or medical treatment	97	91	90	97	99	80	92	97
Have a group insurance plan	100	89	90	99	99	88	100	95
Have a pension plan (other than OASI)	51	23	19	51	50	12	42	41
Have a credit union	9	12	10	10	9	12	9	10
Rent company houses to employees	64	66	48	71	63	72	71	63

*"SIRC" plants were represented at the Southern Industrial Relations Conference in 1951; "non-SIRC" plants were not.

the establishments without departments in the use of 24 of 32 practices, as columns five and six in the Table reveal. The differences between the two groups may be due to differences in size. The plants with personnel departments and/or full-time personnel workers average 1,573 employees; the plants without, 513. Of the 104 textile plants surveyed, 81 (78 per cent) fall in the first group and these plants employ 92 per cent of the 139,000 textile operatives covered by the study.

Four-fifths or more of the plants with personnel departments use application blanks, request references, interview applicants, and follow hiring age limits. Slightly more than a fourth use tests in hiring. Nearly all of the plants without personnel departments usually interview job applicants, and approximately two-thirds use each of the other employment practices, except tests which are

favored by fewer than one-tenth.

Plants without personnel departments lead in the use of piece work and incentive plans and profit sharing programs, although specialists would be very helpful in administering such programs. The plants with personnel departments make much greater use of job evaluation, seniority, and employee rating than do plants without departments. Even so, only slightly more than a fourth of the plants with departments rate employees.

It is natural for the plants with personnel departments — usually the larger ones — to place greater emphasis on communication structures and techniques. The Table shows that nearly all of the plants with personnel departments employ full-time personnel workers, but that few of the other plants do.

From approximately three-fourths to all of the plants with personnel departments have safety and training programs, carry on exit interviews, try to interview all employees who leave, keep records of exit interviews, have formalized grievance systems, and carry on personnel research. In all of these practices, except safety programs, the plants with personnel departments lead those without, which are usually much smaller. Only a third or fewer of the plants with personnel departments post job vacancies, sponsor suggestion plans, carry on collective bargaining, and employ outside consultants. Yet in the use of each of these last practices, they lead the plants without personnel departments by approximately two to one or more.

Nearly all of the plants with personnel departments provide some food service, furnish first aid, health or medical treatment, and have group insurance plans. One-half of them have pension plans and nearly two-thirds rent housing to employees, but fewer than one-tenth have credit unions. The plants without departments lag far behind the others in providing food service and adopting pension plans, but approach them in provision of first aid, health or medical treatment, and group insurance. In sponsoring credit unions and in renting company houses, they lead.

What Impact Do Unions Have on Personnel Practices?

That organized plants make wider use than unorganized plants of the personnel practices under study is to be expected, and is borne out by analysis. Unionization may lead management to give greater attention to human relations, in which case personnel practices may reflect the change. The impact of unionization, however, may be greater than the present direct comparison of the practices in union and non-union plants suggests. This may be true because many personnel programs have been launched with a subsidiary or major purpose of preventing organization by "outbidding" the union. In such instances, the union has a real influence in non-union as well as union plants which a comparison of current practices cannot reveal.

Of the spinning and weaving plants surveyed, 24 (23 per cent) report that they are unionized in part or in whole. The organized plants are somewhat larger than the unorganized, with 1,714 operatives on the average, compared with 1,401. Within the plants partially or fully organized are 30 per cent of the operatives covered by the study. Greater size as well as unionization appear to lead to wider use of the selected personnel practices. This fact needs to be borne in mind in the following analysis.

The organized plants lead in the use of 23 of 32 practices, and lag in the use of seven, as columns seven and eight in the Table indicate. They have a moderate lead in the use of each of the employment practices considered, except tests, which are used by a greater proportion of non-union than of union plants. Most of the plants in both groups use each of the procedures except tests.

Surprisingly enough, the union plants lead the non-union in the use of piece rates and other incentive systems, although unions are widely believed to oppose such programs. As would be expected, the organized plants lead in the use of seniority, and fall behind in the use of profit sharing programs and employee rating systems.

A substantially greater proportion of the organized than of the unorganized plants have full-time personnel workers and personnel departments, and carry on personnel research — possibly as a counter measure to union pressure. The organized plants also lead in the posting of job vacancies and in establishing formal grievance procedures, both of which are programs unions favor. In the use of each of the remaining communications procedures there is relatively little difference between union and non-union plants, except in the keeping of records of exit interviews. Here the organized plants have a large lead. The non-union plants seem to favor suggestion plans and a program of interviewing all employees who leave somewhat more than do union plants.

There is no great difference between union and non-union plants in the use of the six benefit programs studied. The organized plants do have a moderate lead in the provision of food service, group insurance plans, and, surprisingly, in the renting of company housing to employees. The non-union plants have a similar lead in the furnishing of first aid, health or medical treatment. In regard to pension plans and credit unions, however, the difference is negligible.

Conclusions

This study has brought out the extent to which 104 spinning and weaving establishments, and 602 plants in all industries in the Southeast use selected personnel practices. The comparison of the practices in these two groups reveals the textile units as carrying on richer and more varied personnel programs. In the use of 24 of the 33 practices studied, the

Employee Mental Health — A Management Responsibility

"The issue of mental health is no longer the sole problem of the psychiatrist," reports Industrial Psychology, Inc., Tucson, Arizona — a psychological research organization. "Company management must now recognize its responsibility in the area of employee mental health, by providing a work environment which helps prevent mental breakdown."

Based on reported diagnoses, there are over 6½ million cases of psychosis and neurosis in the United States today. It is further estimated that there is an equal number of cases of which there is no record. A conservative figure is that one out of every 20 persons will at some time be a patient in a mental hospital. Business and industry, by definition, get their share of these mentally disturbed persons. In addition, business and industry often create an environment which is more conducive to mental breakdown, than the preservation of mental health.

What can management do to assist in this problem of employee mental health?

Here are three broad activities which, according to the psychological research organization, can help to create a work environment conducive to mental health:

(1) *Watch for characteristics of mental breakdown.* These may include: constant tiredness or fatigue, abnormal fears or anxieties, constantly recurring ideas which do not have a rational basis, compulsions (e.g. continuous hand washing), recurring loss of emotional control, the alcoholic, excessive lying, continuous complaints, troublemaking, constant rule violations, continuous requests for special consideration, stealing, flagrant disregard for social standards.

When such symptoms occur *repeatedly*, the employee should be referred to the company physician, who will decide whether psychiatric referral is necessary. At no time should company management or the personnel director attempt to diagnose or treat an employee where there is any suspicion of mental abnormality. Also, the earlier such referrals are made, the better psychiatric prognosis for the case.

(2) *Be sure that employees are correctly matched to jobs.* This is best accomplished by use of psychological testing techniques, combined with the interview.

An applicant who is in good mental health on entry into a company can break down under the stress of job misplacement.

(3) *Employees must receive recognition and status.* Employee morale and motivational studies have shown that factors such as job security, type of work, recognition, known status in the company are basic employee drives — in fact, rank above salary. Psychological techniques are available to companies for carrying out systematic and objective programs to achieve these goals.

textile plants lead. The wide use of piece work or other incentive systems, formal grievance procedures, food services, and company housing by spinning and weaving plants is deserving of special notice, as is the infrequent use of credit unions. More than a fifth of the textile plants draw the line at 55 years or lower in hiring new workers, a practice which may later produce difficulties if followed without great flexibility.

Those textile plants which send representatives to the annual Southern Industrial Relations Conferences carry on a more varied personnel program than those plants which do not. This difference may be the result of differences in size and in use of personnel departments.

Number of employees, presence of a personnel department, and unionization all appear to have important influences on personnel practices, although it is impossible to isolate the influence of any one of these factors. The larger plants lead in the use of piece work, profit sharing, full-time personnel workers, personnel departments, and in unionization, among other practices. The plants with personnel departments are larger than those without and lead in the use of such technical programs as testing, job evaluation, merit rating, and pension plans. They lag, however, in use of piece work, profit sharing, credit unions, and housing.

The organized plants tend to be the larger units. They lead in the use of full-time personnel workers and personnel departments and many other practices including, surprisingly, the use of piece work or other incentive systems. They lag in the use of tests and profit sharing. Although the organized plants lead in the use of most of the employee benefit programs studied, the difference is not nearly as great as might have been expected.

In summary, this study has surveyed the usage of selected personnel practices in spinning and weaving plants and laid the groundwork for fruitful and detailed investigation of the use of specific practices.

FOOTNOTES

1. Robert Saltonstall, "Evaluating Personnel Administration," *Harvard Business Review*, November-December, 1952, pp. 93-104.

2. The individual plant has been used as the basic unit for the study; however, multi-plant firms returning one questionnaire covering several plants have been counted as one large plant. The term "textile plant" as used here, refers to these establishments.

3. Firms listed as employing fewer than 50 operatives were excluded because a pilot questionnaire sent to 100 such firms in all types of industries produced few returns, and these revealed that very small firms used very few of the practices covered. Plants represented at the Southern Industrial Relations Conference are referred to at times as "SIRC" plants and the others as "Non-SIRC" plants.

4. One question dealing with specific hiring age limits is omitted because the results could not be summarized readily.

5. Preliminary investigation of job evaluation practices suggests that a number of firms have confused job evaluation with time study. The actual number of firms using job evaluation may be less than the questionnaire answers indicate.

6. For this purpose, the dividing line between large and small firms possibly should be higher than 500.

Reviews | Investigations | Explorations | Surveys | Analyses

The Belgian research report on

Evaluating Warp Size in

VOLUME 1, number 1, of a new textile periodical appearing this year devotes its first issue to a report on laboratory evaluation of warp sizing which is one of the most complete and detailed so far to be reported in current literature. Since this is a first copy, and since the periodical, "Annales Scientifiques Textiles Belges," is in French, it may be desirable to have a summary in English for the benefit of many who are interested in the subject, yet might otherwise miss seeing the results of this work. The following summary also includes comments on related recent work.—Eds.

By Paul Seydel, D. Sc.
Seydel-Woolley & Co.

EXCLUSIVE

SHORTLY before the appearance of some Belgian work on warp sizing research[1], French researchers published an introduction to their work in the same direction[2]. It was strictly an introduction, describing the methods to be used for carrying out the work, but to date of the present writing, no results have yet been published. The French report noted that sizing experience, empirical as it is, has done much toward improving of slashing methods, but that we should learn to relate cause and effect and we should be able to "relate loom breakage to intrinsic properties of sized yarns."

To do this requires an analysis of "loom fatigue," the causes of warp breaks on the loom. Named are:

(1) Tension, both static, from the tightness necessary to hold the yarns in place; and dynamic, from the pull of the various motions of the loom.

(2) Repeated elongations, which cause fatigue failure in yarns as well as in metals.

(3) Friction, both from the rubbing of the yarns against the loom parts and against each other.

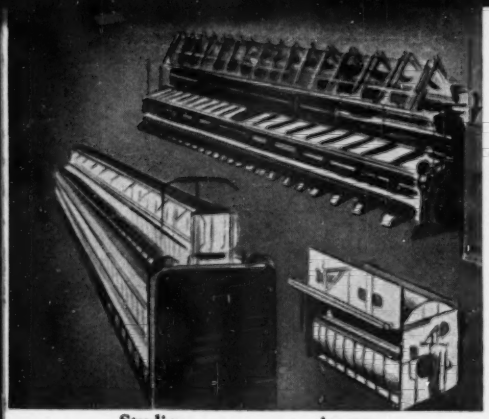
(Work is going on at present also at Georgia Tech on evaluating loom stresses[3]).

Assuming that these are the principal causes of yarn failure, then, if we can set up laboratory methods of measuring the resistance of yarns to: (1) Tension — breaking strength; (2) Fatigue — repeated elongations; and (3) Abrasion, we should be able to judge in the laboratory the efficacy of the application of sizes by measuring the amount of improvement made in these properties over those of the unsized yarns.

Of course, this measures only a particular set of yarns. If we are to be able to evaluate any given size formulations, it is also necessary to be able to apply those formulas uniformly to the yarns, and to do it on a laboratory scale, it being obviously impractical to try all kinds of new formulas in the slasher room. Both the Belgian and the French investigators stress this point particularly. Although most of the American articles have not laid as much stress on this, the very multiplicity of laboratory slasher designs to date[4, 5, 6, 7, 8] among others not reported, shows that no one is yet satisfied with laboratory application.

The Belgians, furthermore, state in their summary that there is an unexplainable difference in breaking strength increase between lab results and mill results, in favor of the mill. They do not go much further in comparing their results with the mill (after all, the object of the game), probably from feeling that their work so far is principally groundwork in assuring themselves that they can reproduce results once obtained in the laboratory. The French stated definitely that the laboratory results can be extrapolated to the mill with reasonable accuracy, although they gave no figures to prove it.

The ability to correlate lab results with mill results has been



Studies Assays

The thirteenth article of a series dealing with research work and the practical application of research findings in the mill.

the Lab

claimed, and figures have been given by several rather recent investigators[9, 10, 11]. (Two of these reports were lab testing of yarns sized on mill slashers[10, 11]). Several others have found this possible at least within limits (notably Elting of Kendall Mills and Abrams at the Southern Research Institute), although almost no other figures have been published.

It is of particular interest that all those who claim to be able to correlate lab and mill results base at least part of their tests on some form of abrasion apparatus. One of the most thorough investigations reported on sizing in this country, which stated that correlation of lab and mill results had not been obtained[12], did not go into this aspect of yarn testing. Among other properties, those investigators tested breaking strengths, elasticity, and various properties of films made from sizes, without being able to point out any single criterium. The practical mill man himself has long ago learned that a large increase in tensile strength of the sized yarns by no means indicates a good-running warp[13].

Several times the proposal has been made to test sized warps by running them in a loom with an empty shuttle and a stationary warp[15]. Results indicated possibilities, but the test is difficult to tie in to lab-size operations.

De Meulemeester and his Belgian group[1] review first the requirements of a warp size. Then, in stating the problems, he notes that the characteristics of a size bath capable of giving good mill results should be studied, and processes of analysis and control should be worked out, to be certain of having those characteristics. Also, an adequate laboratory slasher must be constructed, and reliable testing machinery must be devised and constructed.

In the work, properties of various commercial starches were studied, including potato and modified corn and potato starches, as well as a cold-swelling starch. To become more familiar with the properties of their base materials, several experimental modified starches were made and tested.

Among the properties of starches studied were:

a. Moisture. Between oven-drying, vacuum drying, Karl Fisher titration, and xylene distillation, they preferred the latter.

b. Ash, including conductivity tests

c. Microscopic studies

d. Hydrolysis to glucose

e. pH

f. Reducing power

g. Paste viscosities. They tried Ostwald pipettes, the Hoeppler falling-ball-in-a-tube, the Stormer viscometer and the Brabender amylograph. Tests were made on opacity of these pastes.

h. Refractive index. It was shown that this property is practically unaffected by the modification of the starches, and it is therefore a good method for checking starch concentration.

Several other chemical tests were carried out, and results reported on a number of these starches in each test.

A method of determining per centage starch on the yarns was worked out. It consisted of hydrolyzing the starch with acid and titrating the resulting glucose. (The method does not seem to be any more accurate than an analytical desizing, which was later used, and is more tedious. It gives only starch, which may be an advantage or a disadvantage, depending on circumstances.)

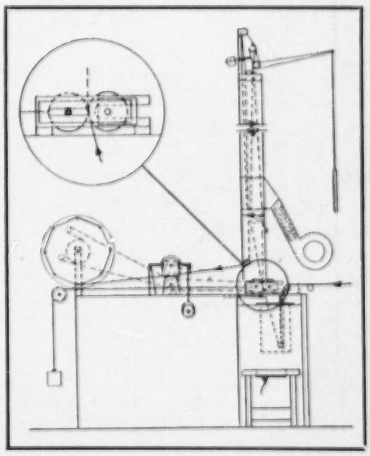
A laboratory preparation of a modified starch by stirring seven hours with ¾N sulfuric acid is described.

A number of batches of starch were then cooked at various concentrations, to study the viscosity behavior. Viscosity measured by the falling ball showed that the starches remained fairly uniform after some of the modified starches had been cooked 15 minutes, although some required more, and certain starches required two hours of cooking. Some were stable at temperatures as low as 60 C, while others began to gel at temperatures below 75 C. (Note that American corn starches begin to gel at even higher temperatures than this.)

After all these tests, a certain modified potato starch was chosen and all sizing tests conducted with it alone.

The laboratory slasher design is rather simple (Fig. 1). Several kinks had to be worked out—e. g., prevention of yarn rolling, uniformity of pick-up from side-to-side of the squeeze rolls, etc., but the present machine, while it could use more modification, gave uniform and reproducible results to judge from the many figures and

FIG. 1. Design of the laboratory slasher used for the sizing tests.



graphs. The size box was heated by a bath whose temperature was controlled by immersion heaters. From the squeeze rolls, the 20 yarns go into a vertical drying tower, heated by a souped-up hair dryer, then through a splitting comb to drag rolls (some trouble was had with keeping stretch down) onto a beam.

The sized yarns were checked for moisture, size pick-up, and penetration of size. Breaking strength was tested with a Statham strain gauge, and elongation at the break was measured at the same time. For abrasion testing, a number of yarns were submitted to 700 cycles of rubbing against a blade, then the breaking strength and elongation were checked (note that the yarns were not carried to the breaking point on the abrader, as has been done by other investigators. It is claimed that in this way statistical reproducibility of tests is greatly improved). Fatigue failure was tested by submitting the yarns to 1000 cycles of 1% elongation, then testing residual breaking strength and elongation. Coefficient of friction of the sized yarns was measured by an apparatus analogous to that of Buckle and Pollitt[14]. Machinery and methods for each of these tests is thoroughly described in the report.

The effect of the concentration of the starch, the temperature of the bath, and the pressure of the squeeze rolls was checked in each of a series of tests. Also the effect of a wetting agent added to the starch was noted.

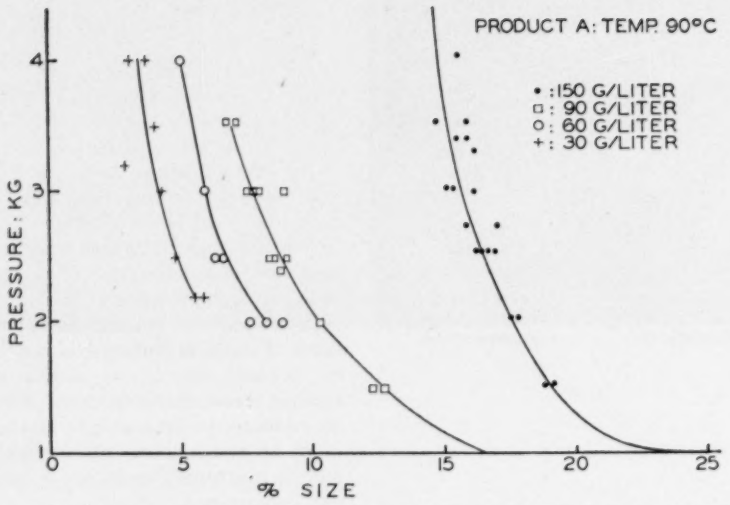


FIG. 2. Effects of pressure and concentration at 90 C on the size pick-up.

The effects of pressure and concentration at 90 C on the size pick-up is shown (Fig. 2). In all cases, pick-up decreases markedly with decrease in temperature to 75 C or 60 C. A test made at a lower temperature showed that the amount of pick-up with a wetting agent is slightly better than without. (Kenk notes that a wetting agent decreases abrasion resistance. Since the wetting power of water itself increases with increase in temperature, the effect of a wetting agent might not be as marked at higher temperatures.)

For comparison in the testing, some yarns were run through the slasher without starch, one set dry and another with water alone. These both showed deterioration in comparison to the original raw yarns, but 2% or more of size more than made up for this.

It was shown that the tensile strength increased in direct linear proportion to the amount of size added. Further, the deteriorating effect of abrasion and elongation

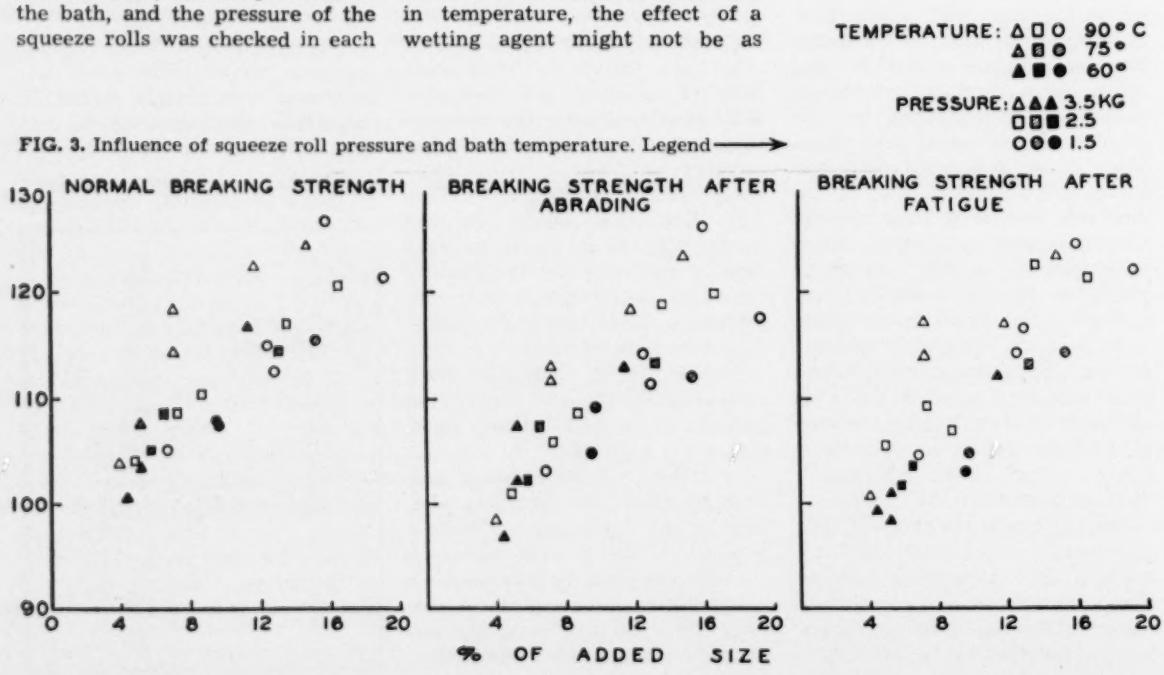


FIG. 3. Influence of squeeze roll pressure and bath temperature. Legend →

fatigue on the yarns was greatly diminished by the size (Fig. 3), and at high concentrations of added size, the effect of the amount of abrasion and elongation given in this series of tests was almost nothing. Although the elongation at the break was decreased by sizing, the amount of decrease was about the same in all ranges, and no conclusions could be drawn from this property.

Penetration studies had not been completed, but it was stated that it was clear that penetration increased with concentration. (This seems strange, in view of the fact that the paste thickness also increases — one would expect less penetration. Actually, it is the experience of our laboratory, that seven cuts along one length of sized yarn will show at least six different penetration patterns. Penetration is about as statistical as any other textile property.)

Although no attempt was made to compare directly any of these results with mill tests, it was shown that uniform and reproducible results could be obtained on certain tests with a laboratory slasher and with certain forms of testing apparatus. No entirely new principles were offered, but the work was carried out further and in much more detail than has been previously reported. The approach via wearing, then breaking, rather than simply wearing until worn in two, may show itself more accurate, even though more time-consuming.

It is not necessary to point out the advantage to the mill of development of laboratory methods for testing new sizes, particularly with the advent of an increasing variety of synthetics. But this development is extremely tedious and time-consuming, and much more work needs to be done in correlating with mill results.

The article described shows that the laboratory can reproduce its results. Stallings, Worth, and Kenk have shown that abrasion tests of yarns can be translated to mill results, at least to good indications. De Meulemeester claims that his test methods had much better statistical accuracy (improved coefficients of variation) than straight abrasion tests.

Now if we can get a good, long series of laboratory tests compared with accurate loom stop tests on the same sizing conditions in the mill, we may be getting on the right road.

22.6% More Nylon Seamless Hosiery Produced Last Year

Production of all types of hosiery in 1953 was 158,788,326 dozen pairs — 2.7% less than the record year of 1952 and 2.6% higher than the number of pairs produced in 1951. Of that number, 59,209,945 dozen pairs were women's full length stockings, practically the same quantity as in 1952; 59,367,835 were men's hose, 6.1% less than 1952; and 24,931,117 were children's and infants socks, 4.6% less than the quantity produced in 1952. These were the figures revealed in "Hosiery Statistics —1953" compiled and recently published by the National Association of Hosiery Manufacturers. Other interesting facts presented were:

1. 50,657,564 dozen pairs of the women's full-length hose were full-fashioned, 1,148,940 less than the number produced in 1952. 8,552,381 dozen pairs were seamless, an increase of 880,871 over 1952.

2. Nylon seamless hosiery showed an increase in 1953 of 22.6% over 1952, 6,271,383 dozen pairs compared with 5,115,220. Nylon hosiery now represents 73.3% of women's seamless production as against 66.7% in 1952.

3. Trend continues toward the finer denier nylon yarns. In October, 1953, full-fashioned stockings made of 12 and 15 denier yarns represented 82.2% of the total compared with 81.6% reported for October, 1952. In seamless stockings the comparative percentages were 97.9% and 96.3%.

4. Same trend was observed in gauge construction. In October, 1953, 95.3% of the hose produced were in gauges 51 and up as against 92.2% the year before. Gauges 60 and 66 represented 41.3% as against 35.3% a year earlier.

5. Men's half hose production dropped 17.2% below the 14,000,000 dozen pairs annual rate for the years 1949 to 1952.

6. 37.8% of the full-fashioned hosiery was produced in the North and 62.2% in the South; 17.4% of the seamless hosiery was made in the North, while 82.6% was manufactured in the South.

7. Average number of operatives employed in full-fashioned mills per month for the year as a whole was 58,993; seamless, 65,436. Since production of full-fashioned hosiery was 2.2% less than in 1952 and average monthly number of employees was 4.8% less, production per operative increased.

8. There were 1375 hosiery plants in existence on Dec. 31, 1953, a net decrease of one from the 1952 total — 762 were full-fashioned and 613 seamless. There was little fluctuation in the plants existing in the South, some consolidations being offset by the incoming of new plants. There was considerable activity in the North in full-fashioned plants especially, with a considerable number liquidating but offset by newcomers in the field.

9. Exports and imports of all types of hosiery decreased 11% and 7.3% respectively from the 1952 figures.

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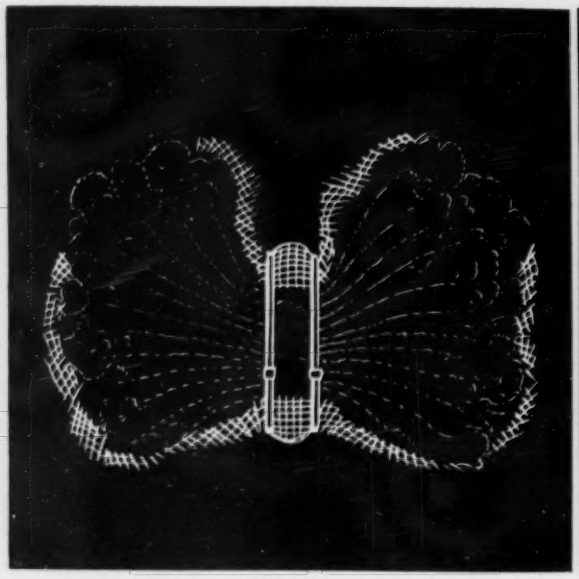
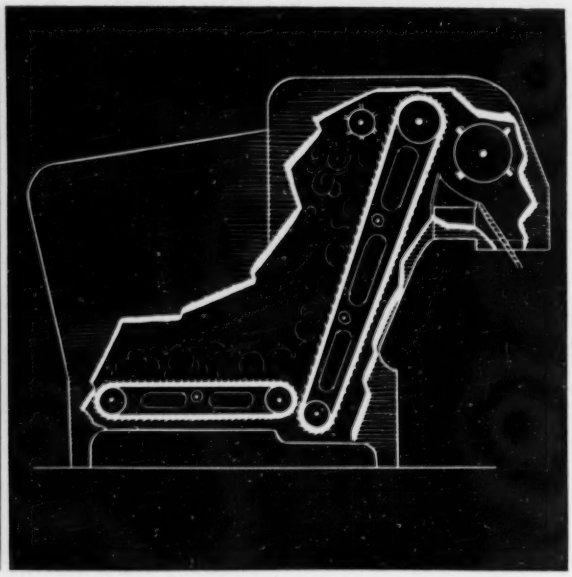


REMOVAL of all but two ties from bale brings about a leveling out of moisture content.



FEED APRONS in hopper feeders should be run slowly; lifting aprons run fast.

IRRIGATED COTTON-

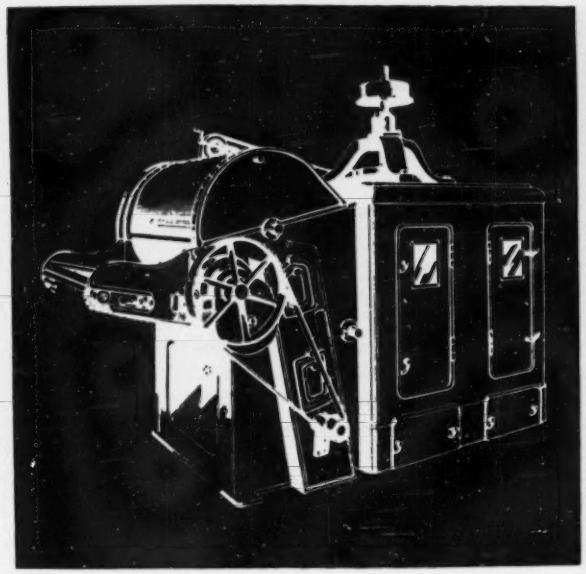
By Erwin Hard
EXCLUSIVE

SEVERAL YEARS AGO, with the advent of California and Arizona irrigated cottons, a number of unforseen, serious manufacturing problems developed. The idea that cotton producers might use arid lands for growing fine quality staples, producing more pounds per acre and at a lower production cost, appealed to everyone — those concerned with farming and with the textile industry as well. But when the first bales were run, the different characteristics of this irrigated cotton caused trouble and in many cases the cotton had to be pulled out of the mills until tests could be run to determine what could be done to use it successfully. At the same time, these problems were brought to the attention of the cotton growers and they also began experimenting with seed selection, agricultural experimenting and development work. Now, after several years of study and cooperation between the cotton growing industry, the gins, and the textile manufacturers, a great deal more is known about these cotton types and their uses.

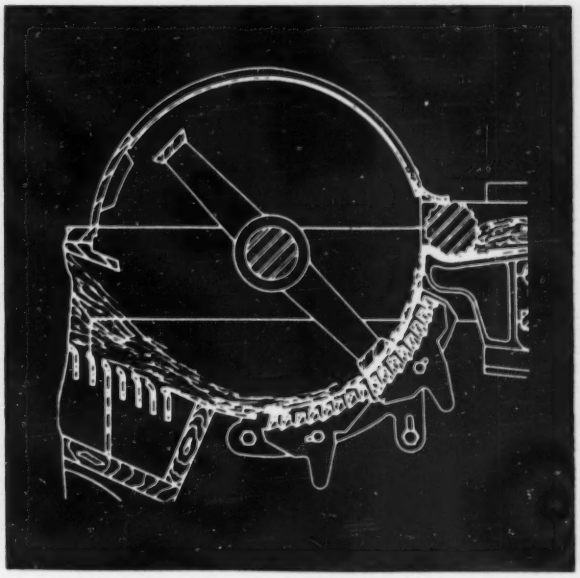
Mill Problems with Irrigated Cottons. The first difficulty encountered by the textile mills was the problem of proper opening, blending, and cleaning. There was also an immediate increase in nep count at the card web. While this problem had come up many times before because of different cotton types and cotton grown in different areas, it seemed at first uniformly characteristic of the irrigated cottons.

Textile schools and mills, jointly and separately, started extensive tests on different cotton mixes. The mills also started testing different settings, speeds, etc., keeping accurate records of their results. These were freely compared and became the subject of much discussion in meetings of textile operating groups throughout the industry. Some mills reported that they had been fairly successful in running mixes of from 10 to 30 per cent irrigated with 90 to 70 per cent rain grown stock. Most would admit however that the net result was that the small percentage of irrigated cotton used simply minimized the effect of nep increase in card webs until the small difference could hardly be detected.

In the course of these experimental runs one thing stood out in favor of the irrigated cotton, i.e., better breaking strength. Fiber analyses showed the basic reasons for this improvement. While there was in most cases a wider variation in the fiber lengths within the samples, many of the fi-



VERTICAL OPENER at delivery end of the blending belts makes for better fiber preparation and increased cleaning.



CONTROL blows per inch at the pickers so as not to curl cotton, cut up seeds and other foreign matter.

MILL HEADACHE?

bers were quite long and seemed to cling tenaciously to other fibers when twisted into yarns. In fact, twist could be reduced, thereby making for further savings in manufacturing.

This known wider variation in staple length naturally disturbed most spinners, because it involved a problem of proper roll settings and drafting. Most plants had long draft systems of one kind or another, but none would produce as smooth a yarn with this wide staple variation.

In order to be fair in comparing the irrigated types with the rain grown types, we should acknowledge in the beginning that in either case there is always considerable variation within cottons from the same area, the same bale, or even within a sample drawn from a bale. It was concluded that if the proper method of opening and blending could be determined,

Moisture control and blending critical points in running arid-land cotton.

part of the problem would be solved and many advantages would accrue.

Experience also brought out the fact that there were some similarities here to the use of compressed and "Hi D" cottons — not that the fiber growth was the same, but that the mixing and feeding methods required were similar.

For many years mill operators have known that the removal of all but two of the ties from the bale, after weighing and before storage, helped greatly in the running of compressed and "Hi D" cotton. It was found that this proved highly advantageous in the case of the irrigated types. This method of storage brings about a leveling out of the moisture content in both, whether additional regain or a drying out of some stock is desired.

Opening and Blending. We believe that the use of the multi-feeder system of blending and feeding originated with the fine thread mills, but it soon found its way into other plants. Today many good mills use this method, employing several hopper feeders dropping small tufts of cotton on a long conveyor or blending belt. This method has proved to be far superior to the bale breaker, or opener, system. Space will not be devoted here to enumerate these many advantages; in fact we believe most everyone is in agreement on this point. Our only rea-

son for making mention of the method is that the writer's plant is so equipped and, with certain changes in settings and procedures, it lends itself admirably to the successful running of irrigated cottons.

We use fifteen hopper feeders in a line, driven from one line shaft. The operation of these is controlled by a mercury switch in the picker room. They start and stop automatically, insuring correct flow of stock. We lay down 30 bales of cotton per mix, there being two bales in front of each hopper feeder.

Operators are carefully trained to pull off thin layers, of about uniform weight, from each bale as they feed the cotton. The feed aprons in the hopper feeders are run very slowly, but the spiked lifting aprons are run rather fast. An exact speed cannot be recommended; the individual plant will have to determine the requirements best suited to its own conditions.

The shedding or combing roll surface speed should be just slightly in excess of the surface speed of the spiked lifting apron. It should be set as close as possible to the lifting apron. This tears the cotton up into small, fluffy tufts and it is in this state that it is dropped on the blending conveyor belt. In cases where the mill has been operating on compressed or "Hi D" cotton practically no changes in adjustment at this point will be found necessary, but if normally packed, rain grown stock has been used, some adjustments are recommended.

After some experience with operating a plant on irrigated cottons, the change-over can be made without gradually lowering the amount of rain grown cotton and increasing the irrigated cotton. However, a gradual change affords an opportunity for proper adjustments and checking results which an abrupt change would not permit.

We started with 10 per cent irrigated and 90 per cent rain grown, then gradually increased the irrigated and reduced the rain grown until we had our plant using 100 per cent irrigated cotton. There are some irrigated types which will always work better with 10 to 20 per cent rain grown stock. This can best be determined by experience, and depends on the yarn or fabric to be made. The principal reason for this is not to "lift" the degree of cleanliness or reduce nep count, but for hygroscopic reasons. (This will be covered in more detail later in this article.)

DATA FOR MODEL F-2 PICKERS

Beater	Blows per Inch	Speed RPM	Setting, Beater to Feed Roll Inches
Back (Blade)	13.33	960	1/4
Middle (Blade)	25.41	1045	3/8
Front (Kirschner)	12.10	1020	3/16

1" Middling cotton, 15 oz. lap; doffing frequency, 6.23 minutes.

At this point we are going to mention something which we realize is a bit unconventional, and may be met with some question by our readers. We were, however, never fully successful in using compressed "Hi D" or irrigated cottons until we installed a vertical opener at the delivery end of each of our blending belts. Condensers were not necessary as the draft from the condenser fan in the picker room was sufficient to draw the cotton through the vertical openers. In addition to much better preparation of the fibers we secured some excellent cleaning with this machine; in fact the vertical opener motes had to be raked out twice per 8 hour shift and very little fiber was lost. It required less than a minute for the regular operator to rake these out with a wooden rake, and it was not necessary to stop the operations.

We realize that some objections have been made (and with good reason) to the use of a vertical opener at this point, since it tends to curl the stock and make it more difficult to clean and card. We did not find this to be true as long as we held the beater speed down to 600-700 rpm and the flow of cotton to about 900 pounds per hour.

Each of our cleaning lines consists of a 38″ F-5 feeder, 30″ Buckley section, No. 11 condenser, blending reserve, and a 45° Superior cleaner. Our pickers are Model F-2, one-process, 3-beater section, machines. We use two 2-blade beaters, followed by a 3-lag Kirschner beater in the finisher section.

Moisture Is Important. Our picker room is equipped with atomizers and relative humidity accurately controlled to 50%. We also have a filter room and the conditioned air is returned. Because rain rarely falls on irrigated cotton, the fibers seem to develop a resistance to absorption of moisture. Many who have tried irrigated cottons found this gave them trouble. The fibers just do not seem to have affinity for water. Mills which have a return air system are more fortunate in this regard, but others may simply have to blend the irrigated stock with other cotton for successful results. It is, however, very important to come rapidly to the correct moisture regain where using irrigated types.

Another matter of great importance is the number of blows per inch at the pickers. Care should be exercised not to curl the cotton, nor cut up the seeds, leaf, stem, and other foreign matter; knock it out, yes, but do not curl the short fibers and cut the foreign matter up into small pieces. This increases the likelihood of more neps in carding.

Carding. After much experimenting we found that by increasing our licker-in speeds from 450 rpm to 650 rpm a great many more short fibers could be removed, and bits of seed, shell, and immature fibers taken out. This in turn reduced the nep count in the web.

Our lickers-in are clothed 4 points per inch, 32 points per square inch. We set our mote knives to licker-in, bottom 0.007, top 0.010, and to feed plate 0.012.

Our flats were carefully checked and uniformly set to the cylinder,

3 back stands 0.010, 3 front stands 0.009; stripper plate to cylinder, top 0.029, bottom 0.022. All other settings are about the same as normally used in any plant. We card 11 lbs. per hour, 15 oz. lap to 62 grain sliver.

Proper Grinding Is Important. While this point applies to any mill where good carding results are desired, we merely mention here the matter of good grinding. Too frequently there is unjustifiable criticism of the cotton, and often of the cotton buyer, when any change is made in the cotton purchasing policy. The checking of cards for neps, etc., may have become a little slack and some cards allowed to get dull.

We realize there are, and probably always will be, proponents of light and frequent grinding of flats and cylinders; also those who would grind heavily and not so often. This writer would advocate neither, but rather grind to keep the clothing *sharp*. The grinder should set his grinding rolls deep enough to see an occasional fire spark and stay there long enough to be sure it is set to grind the same all the way across the face of the cylinder or flat. Then (and this is most important), go back and check the grinders two or three times during the grinding period. Otherwise good sharp wire, without any burning or hooking, cannot be expected.

Our grinding cycle is every 11 days, with three 8-hr. shifts per 5 day week. We strip every 2 hours and 40 minutes.

Since correct and constant relative humidity is of great importance in running irrigated cotton, we should mention that our card room is central station air-conditioned; relative humidity is uniformly kept at 55%. There are many other good systems and controls, but the important thing is to see that standard conditions are maintained in your card room.

It must be remembered that moisture has to be "forced" into these cotton types, not excessively but uniformly, for best results.

Draw Frame Settings Critical. Until a good uniform cotton mix is established, some troubles may develop at the drawing, such as uneven or cloudy webs. But once this is worked out, the proper draft balance and roll settings can be established. The frequent use of our Uster tester, with integrator and recorder, has been most helpful in this regard. We use two-processes, 4-roll drawing, 6 ends up, 62 grains finisher drawing sliver.

It is desirable, but not essential to use metallic rolls, top and bottom, for irrigated cotton, since they are not greatly affected by moisture or temperature changes and grip the stock a little better. If combination top roll coverings are desired, cork or some of the improved cork combinations will be found satisfactory.

Usually, beyond the drawing processes the running of irrigated cottons is no different from any others. Some slight changes in roll settings, twist, tensions, etc., may be required, but these can easily be determined by the carder and spinner.

It has been the writer's experience over the past five years that considerable savings are possible through the use of irrigated cottons. Sometimes the purchase price is a little better, and weights hold up well throughout the plant. Breaking strength and abrasion tests also show a decided improvement. Even if a mill can not run successfully on 100 per cent irrigated cotton, it will be amply repaid for its efforts in learning to blend it with rain grown cotton to the maximum possible amount.

DRAW FRAME SETTINGS

	Draft	Roll Setting Inches
Front to Calender	1.05	——
3rd to 4th	1.20	1 3/4
2nd to 3rd	2.10	1 1/2
1st to 2nd	2.50	1 1/4

2-inch calender roll, 219 rpm.

Georgia Mill Executives Urged to Establish Public Relations Department

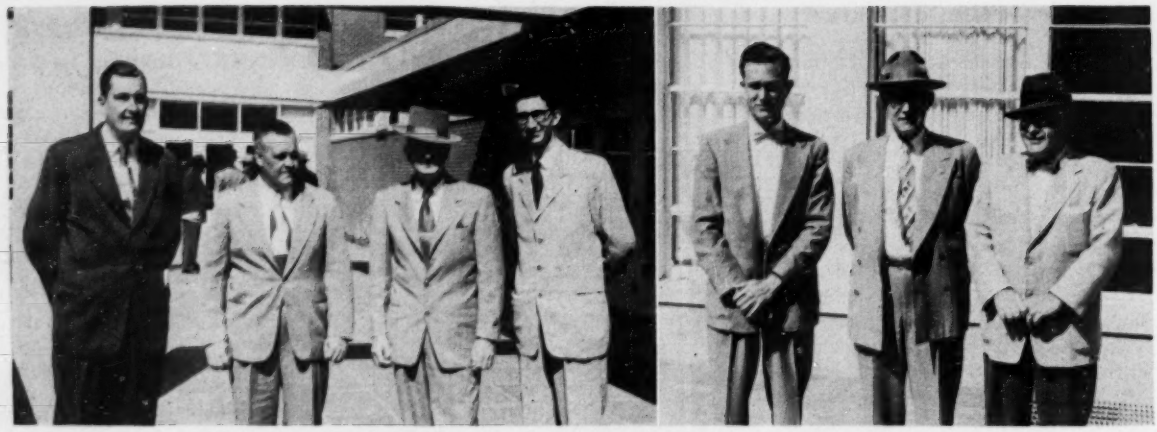
R. H. Jewell, vice-president of Crystal Springs Bleachery, Chickamauga, Ga., in his report as retiring president of the Cotton Manufacturers Association of Georgia before the Association's 54th annual convention at the Boca Raton Hotel, Boca Raton, Fla., emphasized the need for "a full-time, properly-run public relations department." His remarks on this matter are quoted below:

"Industry truly lives in a goldfish bowl. We are subject to scrutiny from all sides and to the interpretation of our affairs by sources which are not always favorable. These conditions, I believe, will be with us permanently; and unless we present our message to the people in a factual and pleasing manner, we may continue to expect unfavorable criticism.

"We recently had in Georgia an example of this which might have been prevented had we had a full-time, properly functioning public relations department. The incident of which I speak is this: The press gave wide circulation to a story from one of our textile centers to the effect that mills were indiscriminately laying off employees, thus causing widespread hardships in the community. Investigation revealed that there were only 400 textile workers in the whole district who were unemployed, and that the distress was caused by the laying off of workers on a government contract.

"We have concerns in other industries which devote a large personnel and huge sums of money to the creation of better public relations, and it seems obvious that the proper way for the textile industry in Georgia to accomplish our desired purpose would be through cooperative efforts. To this end, I would suggest to the Association the establishment of a full-time public relations department and that adequate funds be provided for this activity by the Association.

"The annual value of textile products produced in Georgia is in excess of a billion dollars; and surely an industry which has become as large as ours could afford a sum adequate to establish and maintain a full-time, properly-run public relations department."



REPRESENTATIVES from West Point Mfg. Co. and Huntsville Mfg. Co. Left photo, in the usual order, **R. B. Gray, George Wallace, Odell Yavely,** and **John Lyons,** all of West Point Mfg. Co., Langdale, Ala. Right photo, left to right, **Cecil Bowling** and **Jim Young** of Huntsville Mfg. Co., Huntsville, Ala., and **Ted Wallace** of Keever Starch Co.

Alabama mill men check up on

SERVICE DEPARTMENT

Staff Report

MILL service department problems were up for discussion as the Alabama Textile Operating Executives met at Auburn on April 17. Fourteen mills representing three-quarters of a million spindles answered questions which were sent out before the meeting.

New officers elected were: General Chairman, **Grady Webb, Jr.,** West Point Mfg. Co., Langdale; Vice-General Chairman, **W. E. Williams,** Avondale Mills, Sylacauga; and Secretary-Treasurer, **Cleveland L. Adams,** Alabama Polytechnic Institute, Auburn. **W. T. Curry,** Cone Mills Corp., Alabama City, was elected to the Executive Committee.

Labor Cost on Shop Jobs. At most mills, shop orders originate with overseers or second hands in the department concerned. For small repair jobs the orders may originate with fixers and overhaulers. Orders for major repairs and machine changes must usually be passed on by the superintendent.

The usual practice is to require written orders, although verbal orders are accepted in an emergency and confirmed later in writing.

Most mills have a system for charging shop labor costs to the department for which work is done. Work done for more than one department is pro-rated accordingly.

Card and clock systems are not normally used to keep track of labor costs on shop orders. One mill is experimenting with such a system for mechanical jobs on its second shift. Work orders are stamped by a time clock at start

Take These Steps to Prevent Frame and Ceiling Cleaners Jumping the Track

Keep track level and rigid.

Keep "no-jump" hooks properly adjusted.

Store roving properly on top of creel.

Keep brush holder free of lint.

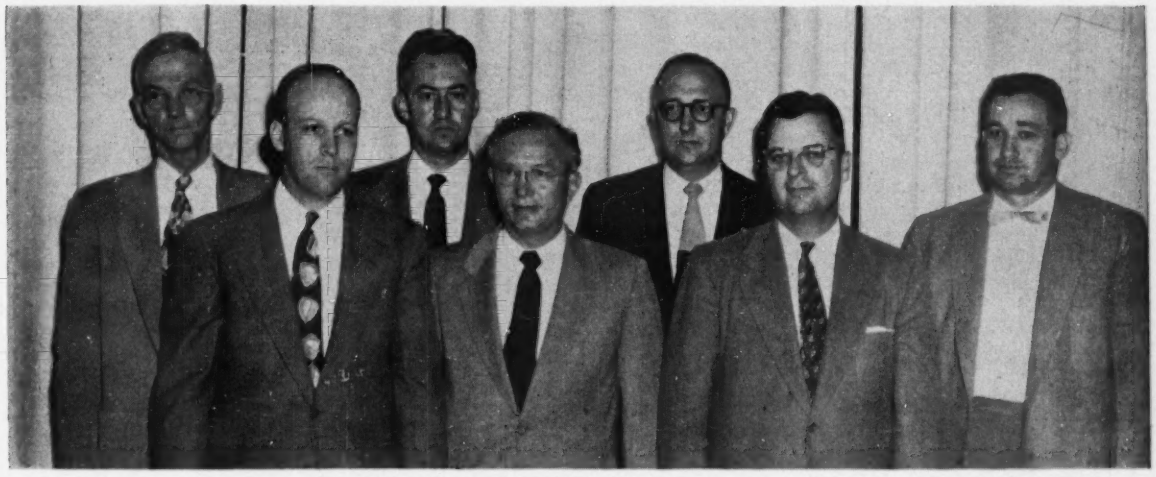
Install width brackets where track has spread between supports.

Prevent personnel from striking unit or track with ladders or waste cans.

Adjust spring tension correctly on reversing bumper.

Install stabilizers.

CONE MILLS and Tallassee Mills sent these delegations. Left photo, left to right, **Charles Moody, Hoyt Wiggonton, Roy Wiggington,** and **W. T. Curry,** all of Cone Mills Corp., Alabama City, Ala. Right photo, **R. C. Christian, A. J. Maddox, J. V. Thompson, J. H. Boddie,** and **J. W. Maddox,** Tallassee Mills, Tallassee, Ala.



OFFICERS and members of Executive Committee, Alabama TOE: front, left to right, **Grady Webb, Jr.,** West Point Mfg. Co., Langdale; **Cleveland L. Adams,** Alabama Polytechnic Institute, Auburn; **N. O. Smyth,** Pepperell Mfg. Co., Pepperell. Rear, left to right, **H. S. Price,** Opp and Micolas Mills, Opp; **R. L. Alford,** Alabama Mills, Inc., Aliceville; **W. T. Curry,** Cone Mills Corp., Alabama City; **D. L. Epperson,** West Boylston Mfg. Co., Montgomery.

and completion of each job.

Metallizing. The majority of mills replying to a question on metallizing use it to a greater or lesser extent for repairing parts subject to wear.

For metallizing shafts, one mill found it helpful to paint the shaft, while hot, with powdered graphite and oil. On take-up rolls, this mill first knurls and then puts on one pass of 80 carbon steel and one pass of No. 2 stainless steel. To circumvent peeling at shaft keyways, shafts are metallized a little deeper at this point.

Frame and Ceiling Cleaners. Interest centered on the problems of accumulation of lint and gum on brushes, and of the unit jumping the track. One mill keeps brushes clean by removing and washing them in gasoline every six weeks

Methods suggested for preventing the unit from jumping the track are given on the opposite page.

Fluorescent Light Replacement. Most of the mills replying to a question on systems for replacing fluorescent lights do not replace them on a fixed schedule. The usual procedure is to replace them as they burn out. One mill relamps fluorescent lights every Monday morning; the weaker lamps do not light after being off over the week-end.

Another mill cleans lamps with a brush or dry rag once a week, and washes reflectors once a year

LABOR COSTS

during the vacation shut-down.

Only one mill reported using a group replacement program, in two departments with about 2500 fluorescent lights. All lamps are replaced when 20 per cent fail. Old lamps are then used in departments not on the group replacement system. Spot replacements are made if burn-outs are grouped, but not if they are scattered.

The first time this mill replaced all lamps simultaneously there was an increase of 100 per cent in foot candles of light. The figure was down 27 per cent after six months, from dirty lamps and reflectors, and burned out lamps. Washing is done at six-month intervals.

Australians Plan Wool Research Conference for Next Year

An international scientific conference on wool textile research is scheduled to be held in Australia in September, 1955, under sponsorship of the Commonwealth Scientific and Industrial Research Organization and the Australian Wool Bureau.

Planners of the three-week conference are hopeful that it will not only stimulate research on wool but will bring about a wider understanding of the research problems of this industry so that the application of science to its advancement may be stimulated. Scientists from textile research institutes, universities, and from industry interested in textile and protein research and related fields are invited to attend the meeting which will be of a purely scientific nature.

The conference will open in Sydney but meetings will also be held in Melbourne and Geelong. Every effort will be made to allow visiting scientists to learn at first hand of the Australian research effort in wool and related fields and something of the Australian wool producing industry.

Further information may be obtained from the Chief Scientific Liaison Officer, A.S.L.O., Africa House, Kingsway, London; the Officer-in-Charge, A.S.L.O., 1800 K St., N. W., Washington 6, D. C.; or the Conference Secretary, Wool Textile Research Laboratories, C.S.R.I.O., 343 Royal Parade, Parkville, N.2, Victoria, Australia.

Tricot Knitters, Take Note!!

Tricot manufacturers stand on the threshold of unprecedented developments. More yarns are available, both natural and man-made, in unlimited possibilities of combination, both in fibers and in the process of yarn. The tricot machine is the most versatile in existence, the 2 and 3 bar machine offering a multitude of possible effects which have barely been tapped. Better quality yarns are the goal of every private producer, and improved throwing in the last few years has been achieved through wider use of statistical quality control. The tricot machines themselves are better and faster with less needle breakage and superior warps.

Markets are expanding, not only in women's wearing apparel but in men's wear as well and in the almost untouched home furnishings market. With the steadily growing population, it takes only a more acceptable product to appeal to the consumer dollar. These horizons can not be reached without effort, can not be done alone by one group or another, but only through the cooperation of the yarn producer, fabric manufacturer, and his customers.

The yarn manufacturer offers research on fiber and technical mill advice. On fibers, it is reasonable to assume that even better fibers will come. On mill advice, every fiber producer accepts the job of sharing the work of product development and is prepared to work with the fabric man if he is given the opportunity by the mill.

The use of advertising promotion and public relations can not be ignored in reaching the new horizon, but in cooperative programs with the fiber producers, the fabric man must be prepared to work on long range staple goods.

The tricot industry, as well as the rest of the textile industry, deservedly has the reputation of being the most backward of all industries in the use of advertising and promotion. *If the textile industries would employ the methods of the hard goods industries, textile products would be selling beyond capacity.*

Where would the money come from?

If fabrics were properly priced, based on adequate service and consumer satisfaction, there would be sufficient money available for promotion and advertising. *Unless the textile industry in general, and warp knit people in particular, are prepared to use advertising promotion on this scale, people will continue to spend their dollars for new television, new refrigerators, and new cars.*

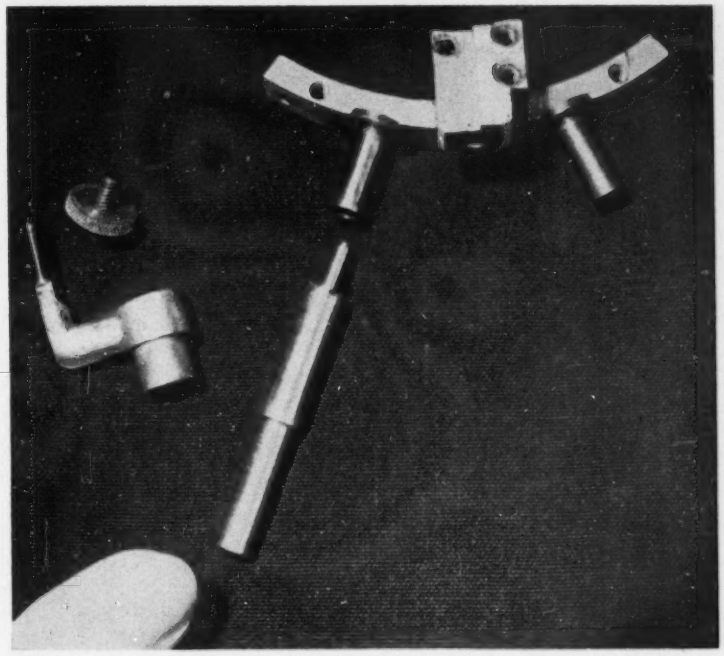
As for tricot fabrics in particular, they, like other textile fabrics, must live up to claims, and they must offer sufficient satisfaction in use to bring that second sale, which is the only sale that can be depended upon. Even for those who feel that they are too far removed from the consumer to control integrity of product, if the quality is maintained by any one level in the industry and that fact well publicized, it will be found that this information will percolate through the distributing channels to the public.

Imagination and creativeness are missing in the tricot fabric as well as other branches of the textile industry. Manufacturing for price appeal only is a short range viewpoint which leads only to loss of market and public confidence.

From remarks of Gomer Ward, Textile Fibers Department, E. I. du Pont de Nemours & Co., Inc., before the recent annual meeting of the Warp Knit Fabric Manufacturers Group of The National Federation of Textiles.

By Ernest Bridges

EXCLUSIVE



Circular hosiery machine fixers— with this tool

fitting komet lifters is easy!

A SCOTT and Williams Komet center cam bracket, Part No. 204141, has two lifter studs riveted to the bracket. Two lifters, one right and one left, provide the means for lifting sliders and needles to inactive position during heel and toe knitting operations. Only one lifter adjustment is provided, and this permits holding the lifter at the correct height to receive slider butts which are to be raised during reciprocation. There are a number of factors to consider when fitting a new lifter or repairing an old one which might be causing trouble:

(1) The inner end of the lifter should just clear the cylinder and sliders when the lifter is in the "Down" position.

(2) Lifter must raise slider butts high enough to clear point of center cam at least 1/32 of an inch.

(3) Lifter must work freely on stud, should have no end play between (A) and (B) as shown in Fig. 1.

In order to reduce end play to a minimum, frequently it is necessary to shorten the lifter stud by grinding or filing off the outer end at (B). The washer (B) should fit flush against the outer end of the lifter surface, and it is next to impossible to grind or file a round small surface and keep it straight. A miniature end mill to do the job is shown in working position in the photo. Fig. No. 2 shows the end mill and dimensions of the tool which was especially designed to do this job quickly and accurately.

The end mill can be used in a drill press, electric drill, or hand drill. The guide pin fits in the lifter stud washer screw hole. A few turns and the outer end of the stud will be milled perfectly straight across, assuring a properly fitting washer. This easily made tool takes the guess work out of fitting up a new lifter or repairing and re-fitting an old one.

A similar tool has been made to mill the inner or outer ends of the lifters when necessary.

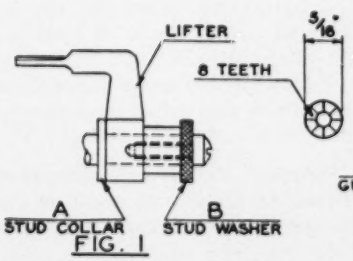


FIG. 1

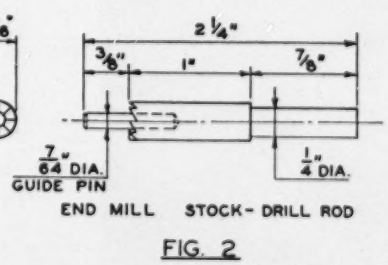
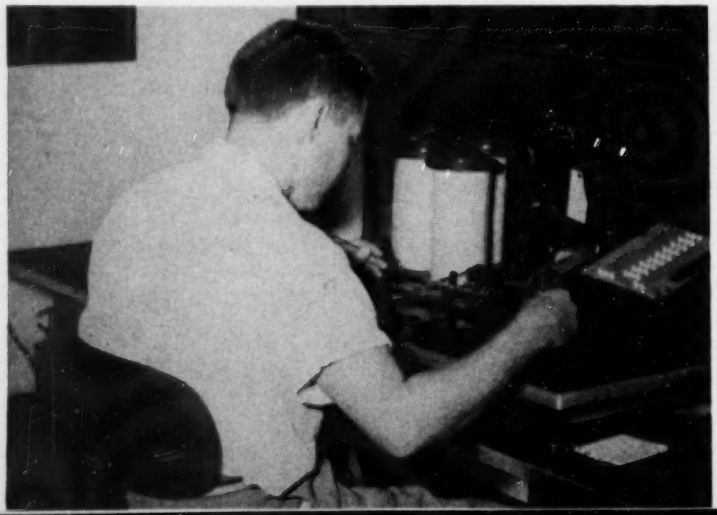


FIG. 2

TWIST TABLE PROVIDES DATA for overseer of twisting to determine correct gear to use in making plied yarn to specifications on the order.

DOUBLE CHECK may be made quickly by referring to data in the table and having section man count teeth in gears on frame.

TWIST SHOULD BE CHECKED on at least five bobbins. The bobbins should be only half full, and five twist tests should be made on each of the bobbins.



THE chances of errors in twist in our plied yarns being run in the twister room have been reduced since we prepared a number of tables for our various yarns and twist multiples.

First, we checked all of the twist constants to be sure they were correct. The gear trains on the different makes and models of frames were counted. The ratio of cylinder to spindle whorl on each type of twister was verified, and we checked the maximum range of twist gears which could be run with each constant.

Next, we secured from the production department a list of all of the plied yarns which we would likely be called upon to make. This department also prepared lists of the various standard and special twists, both warp and filling. The accompanying Table No. 1 is similar to the one which we use for our warp yarns having standard twist. A similar table shows the various filling yarns with standard twist. Separate tables are made up for yarns having special twists.

We then made up a master table (see accompanying Table No. 2) showing the various types of frames in the twister room, the diameters of the rings, the front roll diameters, the capacity of the creels, the numbers of the frames in each group, and the twist constants. Other data might be shown if required.

The left column in the table lists turns per inch from .90 t.p.i. to 12.50 t.p.i. The twists in this column are not exactly as they appear in our table but are listed in what we consider suitable increments.

Underneath each twist constant are the gears which are calculated to give the corresponding turns per inch in the left hand column. This table is not necessarily complete, nor are the data identical with that in our own table, but the form is the same and can be adapted to the needs of each individual mill.

Following are some suggestions as to the actual use of the information contained in the tables:

Regular Yarns with Standard Twist. An order is received by the twister room for 7s/6 ply warp

TWIST TABLES

reduced errors in our twister room

By Horace L. Pratt
EXCLUSIVE

yarn, standard twist, with a length which would require running on the 5½" rings. The overseer of the twister room checks the twist table (Table No. 1) and notes that the twist required is 3.24 t.p.i. He next looks at his master table (Table No. 2) and finds that so far as the ply and ring size are concerned the yarn would run on either Group No. 5, 6, or 7. The nearest twist in the left hand column is 3.20 t.p.i. and can be obtained only with the 266 constant, so it will be necessary to assign the yarn to Group No. 6. (The only other alternative would be to change the constant on a frame, or frames, in another group.)

Mixed Yarns with Standard Twist. The twister room receives from the production department an order for some 6s/3 7s/7; that is, a plied yarn made up of three plies of 6s yarn and seven plies of 7s yarn, making a total of ten plies. In order to standardize our procedure, and to prevent errors in marking the yarns, we have adopted a policy that such yarns will be made up only of adjacent yarns. For example: 6s with 7s, 7s with 8s, 8s with 9s, etc., so that the heavier number will always precede the lighter number in marking. For example: 6s/1 7s/2, 7s/3 8s/4 etc., and the heavier number will determine the twist. This means that if a 6s/1 7s/2 was to be made, the twist for 6s/3 would apply and in 7s/3 8s/4 the t.p.i for 7s/7 would be used.

The standard twist for 6s/3 7s/7 would be the same as that called for in 6s/10, which is 2.13 t.p.i. The nearest twist in the left hand column is 2.10 t.p.i. which can be obtained in either Group No. 5 or 7. Either of these groups has sufficient creel capacity, so it is optional with the overseer as to which group he assigns the order.

Special Yarns. Although we are not illustrating the special twist tables, they are made up similar to the standard tables except that special multiples are used. The master table is used in the same way as with standard twists after the twist required has been determined.

Changing Twist Gears. After the overseer has selected the correct

TABLE 1. Specimen twist table for plied warp yarns, standard twists.

PLY	TWIST MULTIPLE	TURNS PER INCH IN YARNS									
		YARN 6s	7s	8s	9s	10s	11s	12s	13s	14s	15s
2	4.00	6.93	7.48	8.00	8.48	8.94	9.38	9.80	10.20	10.58	10.95
3	3.50	4.95	5.34	5.72	6.06	6.39	6.70	7.00	7.29	7.56	7.83
4	3.00	3.68	3.97	4.24	4.50	4.74	4.97	5.20	5.40	5.61	5.81
5	3.00	3.29	3.55	3.80	4.03	4.24	4.45	4.65	4.84	5.02	5.20
6	3.00	3.00	3.24	3.47	3.68	3.87	3.98	4.24	4.42	4.58	4.74
7	3.00	2.78	3.00	3.20	3.41	3.59	3.76	3.93	4.09	4.24	4.39
8	2.75	2.38	2.57	2.75	2.92	3.07	3.23	3.38	3.50	3.64	3.77
9	2.75	2.24	2.42	2.56	2.75	2.90	3.04	3.17	3.31	3.43	3.55
10	2.75	2.13	2.30	2.45	2.61	2.75	2.88	3.01	3.14	3.25	3.37
11	2.75	2.03	2.19	2.35	2.49	2.62	2.75	2.87	2.99	3.09	3.21
12	2.50	1.78	1.89	2.04	2.17	2.28	2.40	2.50	2.60	2.70	2.80
13	2.50	1.70	1.82	1.96	2.08	2.19	2.30	2.40	2.50	2.60	2.68

TABLE 2.

GROUP Nº	1	2	3	4	5	6	7
MAKE OF FRAME	—	—	—	—	—	—	—
DIA. RINGS	4 5/8	4 5/8	4 5/8	4 5/8	5 5/8	5 5/8	5 5/8
DIA. FRONT ROLLS	1 5/8	1 5/8	1 5/8	1 5/8	1 5/8	2"	2"
CREEL CAPACITY (PLY)	4	4	6	9	13	11	13
FRAMES Nº	—	—	—	—	—	—	—
CONSTANT	266	200	378	130	74	266	67
TWIST (T.P.I.)	GEARS						
90					82		74
100					74		67
110					67		61
120					62		56
130					57		52
140					53		48
150					49		45
160					46		42
170					44		39
180				72	41		37
190				68	39		35
200				65	37		34
210				62	35		32
220				59	34		30
230				57	32		29
240				54	31		28
250				52	30		27
260				50	28		
270				48	27	99	
280				46	26	95	
290		69		45	26	92	
300		67		43	25	89	
320		63		41		83	
340		59		38		78	
360		56		36		74	
380		53		34		70	
400		50		33		67	
420	67	48		31		63	
440	65	45		30		60	
460	63	43		28		58	
480	60	42		27		55	
500	58	40		26		53	
520	55	38	73	25		51	
540	53	37	70	24		49	
560	51	36	68	23		48	
580	50	34	65	22		46	
600	48	33	63	22		44	
625	46		60			43	
650	44		58			41	
675	43		56			39	
700	41		54			38	
725	40		52			37	
750	38		50			35	
775	37		49			34	
800	36		47			33	
825	35		46			32	
850	34		44			31	
875	33		43			30	
900	32		42			30	
925	31		41			29	
950	30		40			28	
975	30		39			27	
1000	29		38			27	
1050	28		36			25	
1100	26		34			24	
1150	25		33			23	
1200	24		31			22	
1250	23		30			21	

What of Synthetics in Circular Knit Underwear?

Although better than 90% of the circular knit underwear our company produces is made of cotton, over 60% of the fabric development work which we do concerns itself with synthetic fibers, or blends, or combinations. You can thus see that we are very much aware of the possibilities of improving upon our present product by substitution or blending in of synthetic fibers.

The cellulosic synthetics, such as rayon and acetate, have not been important in the underwear field because of their poor washability, low wet strength, and relatively poor abrasion resistance. If the presently available shrink resistant treatments for rayon can be made applicable to blends with cotton and other fibers, I would venture to predict a considerable increase in the use of rayon because of the extremely pleasant hand it imparts to circular knit fabrics. The use of acetate, too, should increase, although principally in filament form where it can be used in combination with cotton for decorative purposes and cross-dye effects.

Do the true synthetic fibers, such as Acrilan, nylon, Dacron, and Orlon, in spun form overcome the disadvantages of cotton — namely, shrinkage, slow drying, lack of elasticity, lack of durability, and the need for ironing? The answer is yes. Will they, therefore, displace cotton from the circular knit underwear field? The answer is an unequivocal no. Why? Because in eliminating the shortcomings of cotton, they have created a whole series of new problems to the manufacturer, and most important of all, to the consumer.

Here are some of these problems; of course, they are not shared equally by all the fibers:

1. Difficult and expensive dyeing of many of the wanted shades.

2. A serious static condition which is both physiologically upsetting to the wearer, as well as being unsightly in appearance.

3. A natural color ranging from off-white to a dark cream. In many types of underwear, the pure white fiber is an essential for wide acceptance, and where colors are wanted an off-white shade is a very poor bottom for the dyeing of lighter colors.

4. Heat sensitivity. Some of the fibers are unduly affected by the heat of tumble dryers, steam presses, and the household iron. Even where actual fusing does not take place, both hand and color are often affected.

5. Pilling. This a most serious problem with practically all the synthetic fibers and it is aggravated by the fact that when washed in the regular household wash, the synthetic fibers also pick up pills composed of cotton and other fibers and hold them tenaciously. The result is frequently a rather horrible sight.

6. Soiling. Most of these fibers have an almost magnetic attraction for certain types of dirt and soil which cannot be removed from them by any known means.

7. Lack of absorption and the other comfort factors which I described in connection with cotton.

8. High Price.

Synthetic fibers, of course, are developed and produced by chemical manufacturers rather than the textile industry. In

From paper by Leo J. Feuer, director of research and development, The William Carter Co., Needham Heights, Mass., presented at the April 7, 1954 meeting of the American Association for Textile Technology, Inc.

gear to use for the plied yarn to be made, he makes out a ticket showing the frame number, the yarn number and ply, the length of the yarn, and other necessary data; this ticket is placed on the frame at the foot end near the yardage counter. The section man then gets the proper gear and checks it carefully before putting it on. A board at the head end of the frame is provided for showing the yarn number and ply, the length, and the twist gear. After changing the gear, the section man writes in these data, and the overseer or the secondhand can check the twist gear at any time.

The Effect of Contraction on Twist. If the twist in a plied yarn is checked on a twist counter, it will be found that the actual t.p.i. will vary somewhat from the twist as shown in the tables. For ordinary twist multiples in yarns used for weaving, this variation will not usually be more than plus or minus five per cent. Since it is not possible to use a gear with a fraction of a tooth, sometimes the gear which appears in the table is actually on the high or the low side of the twist called for. In this case it is best to check the twist on a twist counter to determine the correct gear to use. When necessary to insert extremely high or very low twist, the turns per inch should be checked instead of relying upon the tables.

Increments in Twist Table. It will be noted that from .90 t.p.i. to 3.00 t.p.i. we used increments of .10 t.p.i.; from 3.00 t.p.i. to 6.00 t.p.i. we used .20 t.p.i.; from 6.00 to 10.00 t.p.i. we used .25 t.p.i.; and from 10.00 t.p.i. to 12.50 t.p.i. we used .50 t.p.i.

In the first bracket, adjacent gears are from one to eight teeth apart, depending upon the constant. In the other brackets the gears are only one to two teeth apart, indicating that the greater the twist the larger the increments may be. We believe that for practical purposes the reader will find our table reasonably accurate; however, for special twists or in case of very close tolerances, experiments should be made to determine the correct gear to use.

Making Twist Tests. Since there are a number of factors which affect the twist in yarns, extra care should be exercised in making twist tests so that reliable results may be obtained. Some of these factors are: differences in spindle speeds, weight of the travelers, mixed travelers, heavy and light places in the yarn, and perhaps

many respects this is highly beneficial, because chemical companies have been a dynamic force in our economy due to their heavy reliance on research, their bold planning. The only difficulty is that their methods of merchandising products can get the textile industry into serious trouble. They are used to bringing out new products at frequent intervals and improving them as they go along. When a new type of paint is brought out, for example, both the general public and industrial users are happy about it. They can make use of it quickly, and are also glad to get any further improvements.

The situation is quite different in the textile industry. When a new fiber appears on the market, a vast amount of development work is set into motion since every segment of the industry from yarn spinners to commission dyers and garment manufacturers have to learn how to make the best use of that fiber. Much time, money, and at times, new machinery are involved in this process. Then, if a characteristic of that fiber, such as dyeability or stretch, or surface friction is changed, all that work simply grinds to a halt and has to be started anew after most of the previous work is written off the books.

The consumer pays for this in the long run. Is it any wonder, then, that the textile industry is not jumping with joy at the many new synthetic fibers and variations thereof which continually come along? *I venture to say that the textile industry is not able to properly assimilate more than one new fiber every five years, even at today's accelerated pace of research and development work.*

What of the future?

Since all of the presently available synthetic fibers have certain important drawbacks, we can expect few uses in 100% form in the future. *I predict that for in near future, blends will be the most satisfactory way of utilizing the new synthetics.*

This trend is going to require a radical change in the method of merchandising synthetics. Until now, the producers have been trying to build up a strong demand for their respective fibers through direct advertising to the consumer. This worked well initially because the public was hungry for the promised miracle performance and thus eagerly scooped up initial offerings of products made up of each new fiber as it appeared. Since performance was short of being miraculous, and because of the presence of six or more fibers in the field, this type of approach can no longer succeed.

The trend to blends will require a change in merchandising emphasis toward promotion of the fibers and technical assistance to the textile industry rather than the general public. It also means that in the future, the fabric name, or the fabric producers name, or the garment manufacturer's name will become far important in advertising to the consumer, since the fibers used in the blend will practically lose their identity.

Looking ahead beyond the immediate future, it is reasonable to expect that some new fibers, hopefully of a vastly superior type, will appear on the market. More likely than not these will be arrived at through another type of blending; namely, at the polymer level prior to extrusion of the fiber, and perhaps at the monomer level in the production of branch polymers and similar types different from the random copolymers now available.

When that day comes, synthetics will probably give cotton a run for the public's money in circular knit underwear.

others. If possible, bobbins only half full should be used as this will more nearly represent the average of the twist on the bobbins. No less than five bobbins should be checked, and no two bobbins should be from the same tape. We usually make five twist determinations from each bobbin unless the variation is very high, in which case ten tests are made from each bobbin.

To be assured of an accurate length in testing, enough weight should be used on the twist counter to straighten but not stretch the yarn. See A.S.T.M. D 180-52T, Par. 9 (b) for a formula for determining the correct amount of weight to use.

We find that more dependable results are obtained when one end of the strand of yarn is fastened in the left hand, or stationary clamp, the other end brought around the pin in the right hand, or rotatable clamp, and pulled until the correct length is measured. Then the rotatable clamp is fastened. (The stationary clamp is on a slide which should be provided with a stop which will not permit the slide to move to the left more than about one and one-half inches.

In case of cabled yarn, which will have high elongation, it may be necessary to remove the stop to permit all of the twist to be removed and the elongation measured, if such measurements are required.)

The Effect of Winding on Twist. We have often found that when yarns on twister bobbins are tested the twist appears to be correct. However, when the same yarns are removed from the woven fabric, such as the customer would have to do in his laboratory, it is found that the twist has changed. This is doubtless due to the processing between the twisters and the looms. This condition is more frequently noticed in filling, though it may occur in warp yarns as well.

If strict twist tolerances must be met, it is worthwhile to weave a sample of the fabric and check the twist. (When testing twist in the filling, specimens should be taken from at least five bobbins.) If the twist is found to be incorrect, then adjustments can be made to allow for the alterations in twist prior to and in weaving.

All of this may seem to be a lot of trouble and expense in what appears to be such a simple process, but we believe that the results will more than justify this effort.

Efficiency—

the mark at Greenwood Mills' Durst plant

Staff Prepared

THE NEW Durst plant of Greenwood (S. C.) Mills is probably the first complete cotton print cloth mill built in about 25 years. As such it has many of the latest refinements in equipment and construction. For instance, eleven warehouses, one waste house, and one picker room are all combined; large package processing is emphasized.

The completely air conditioned (evaporative cooling) plant is of one story construction, approximately 1200 feet long, 350 feet wide, and housing more than 1700 looms.

Some of the highlights of this new mill are as follows:

Cotton Handling. Cotton is brought in on a spur railroad track, is unloaded into a large corridor where it is weighed by overhead scales on monorail. All bale handling is done by fork trucks. The scale is pushed to each bale, the bale is weighed and lowered to the floor in the same position it was before weighing. Fork trucks then place the bales in storage. Each of the eleven warehouses holds 2500 bales of compressed cotton.

Opening. At opening, bales are laid on pallet on inclined roller conveyor and fed in step arrangement from conveyor which remains stationary until front bale is exhausted. The front bale is lower than back bale, and as front bale is exhausted, the next or second bale is rolled into the first position (see accompanying illustrations). One conveyor is provided for each hopper. Both opening and picking are located near the center of the cotton storage area.

Picking. Electrically operated lap scales and pneumatically operated picker loggerheads help to minimize the labor requirements in removing and handling picker laps. Laps are placed on an electrically operated conveyor which carries the laps to the cards. This conveyor operates on overhead rails and consists of three trains, each carrying ten laps.

Carding. The new type Abington vacuum stripper system on cards automatically restarts the lap feed after the stripping cycle is completed. This saves the card tender considerable time. All card cans and drawing cans are 15″ in diameter and 42″ high and have approximately twice the capacity of other cans commonly used in some mills.

Four-over-five roll drawing runs with eight ends up with rack creels supplying a guide over each can to minimize drag on the sliver.

The improved Adams stop motion is employed on all slubbers. In this operation, 10 cans are creeled at a time, and these are creeled on the doff (on filling only). This procedure prevents bad work caused by slubs and doublings. 12″ x 6″ roving packages are used.

All roving is doffed into boxes stacked on caster-mounted metal trucks. These trucks are carried to spinning and stationed around the frames. The spinners have trucks to accommodate one box of 20 bobbins. These are pushed around the frames to creel as necessary.

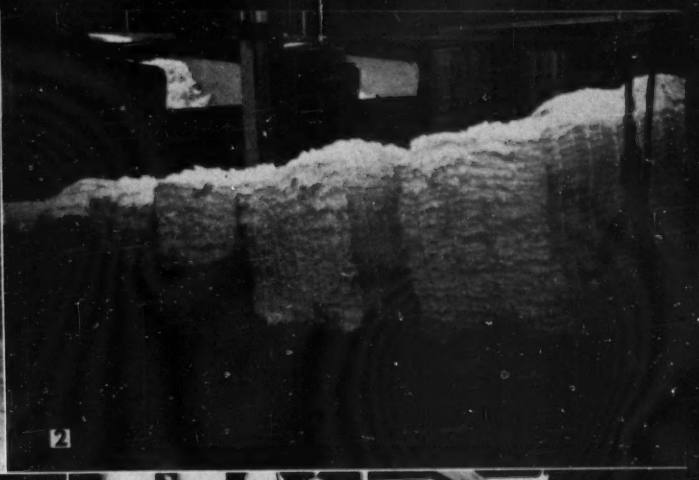
Spinning. Umbrella creels on spinning aid cleanliness in that no bobbins can be stacked on top of the frames to accumulate lint. Roving is handled only one time; it is not removed from the boxes until creeled. There is no "roving hauler" job classification as a result of this handling system.

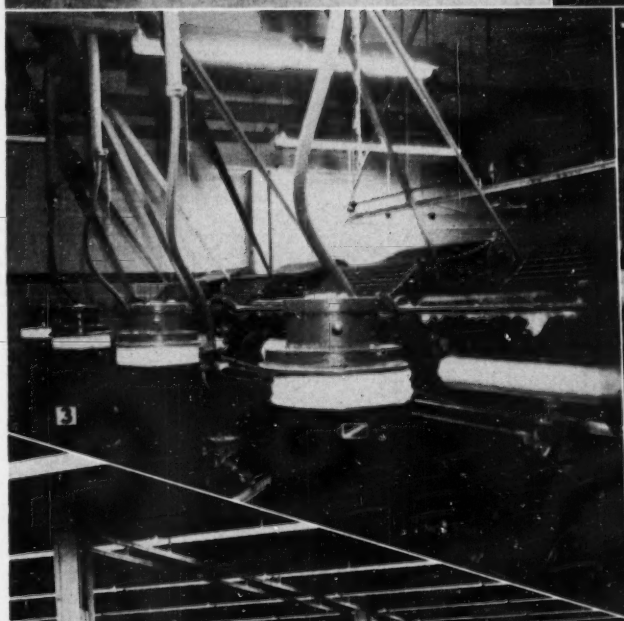
All spinning frames are equipped with Pneumafil and underframe cleaners. Also mounted on the frames are overhead cleaners with ceiling cleaner attachments. On filling spinning, top drive spindles help make a package similar to a quiller package, thereby making the battery fillers' jobs easier. Battery fillers lose no time trying to find the end on the package.

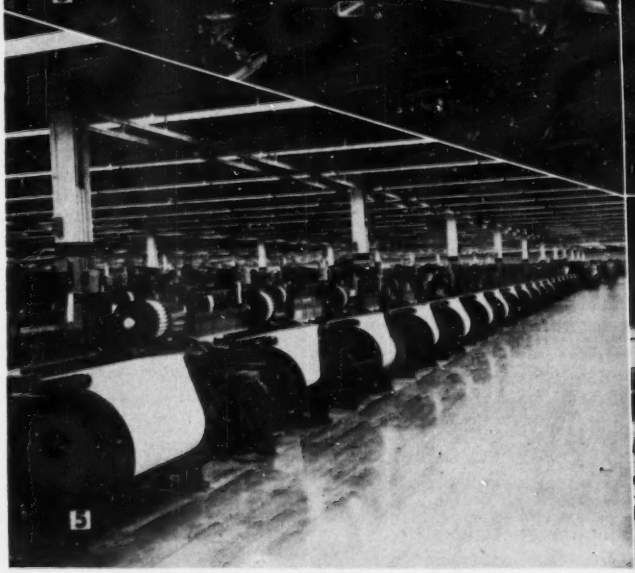
Overhead cleaning equipment is installed in all departments up to the weave room, and automatic materials handling equipment is in use where practicable. All inside walls have a glazed ceramic surface to minimize cleaning and maintenance. Lint does not readily adhere to the slick glazed surface.

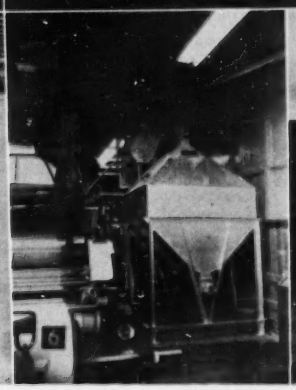
Beam Handling. An overhead conveyor moves beams from warpers to slasher, and a similar conveyor is used to move the beams from slasher to storage. In the weave room, the same type of conveyor is again used to transport the beams to the looms.

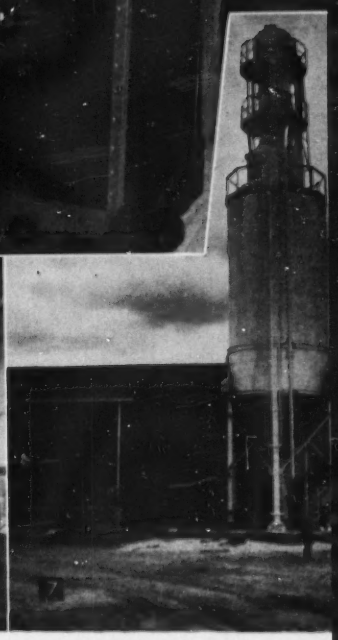
Starch Handling. This new mill elected to use bulk starch which is received in pellet form, and bulk starch handling equipment accommodates a large volume at one time.











1. OVERHEAD SCALES on monorail weigh incoming bales. Fork trucks move bales to storage.

2. INCLINED ROLLER CONVEYOR supports opened bales laid on pallet. Bales are fed in step arrangement. As front bale is exhausted, second bale moves up, and so on.

3. CARD COILER CANS are 15-inch diameter. New type vacuum stripper automatically restarts lap feed after stripping. Lint does not adhere readily to smooth ceramic glaze finish on walls, and maintenance is low.

4. ROVING IS CREELED DIRECTLY from boxes into which it was doffed. Spinners' trucks accommodate one box of 20 bobbins. Top drive spindles on filling help make package similar to that from quiller; battery filler's job is easier.

5. OVERHEAD CONVEYOR transports beams to looms. Similar conveyor moves beams from warpers to slasher and from slasher to storage. Mechanical conveyors are used throughout the plant, wherever practicable. Note large loom beams.

6. STARCH IS DELIVERED to slasher room from bulk starch storage (7), which has a large capacity for starch in pellet form and is convenient to railroad spur.

By Ines V. deGruy and Mary L. Rollins
*Southern Regional Research Laboratory**
New Orleans, Louisiana

the MICROSCOPE and the COTTON MILL or finishing plant

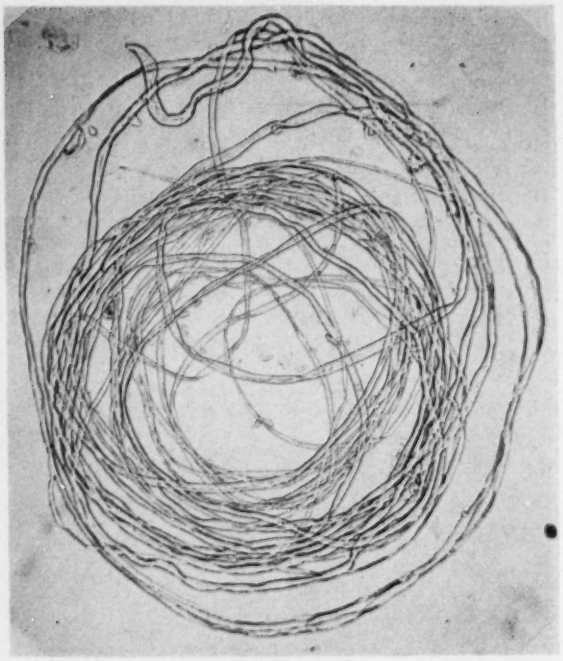


FIG. 1. THIS IS A COTTON FIBER. Photomicrograph of a single Sea Island cotton fiber 2¼" long from base to tip, showing ratio of length to width and variation in wall thickness. Magnification 60X.

EXCLUSIVE

FORMERLY the solution of mill processing problems and the explanation of fundamental principles of textile processing by means of microscopy were not considered practical. During the past 25 years, however, it has been realized that the microscope supplements the unaided eye in solving problems caused by irregularities in fiber properties (such as biologically, environmentally, or chemically induced damage), and in explaining some of the properties of textile products. Thus the gap between microscopy and mill operation has been narrowed to the benefit of both fields of work.

Cotton Fiber Structure and Its Effect on Processing. In a broad sense, the cotton fiber is the smallest unit of direct concern in the over-all picture of fabric manufacture. Microscopical studies have revealed that it is a collapsed and flattened tube, a single biological cell, whose outer covering or primary wall contains waxes and other non-cellulosic materials which influence to a large extent the spinnability of the fiber in the first stages of textile processing.

The primary wall is also involved in wettability, dyeing characteristics, and chemical reactivity of the fiber, because it is the first part of the fiber that comes into contact with the processing environment.

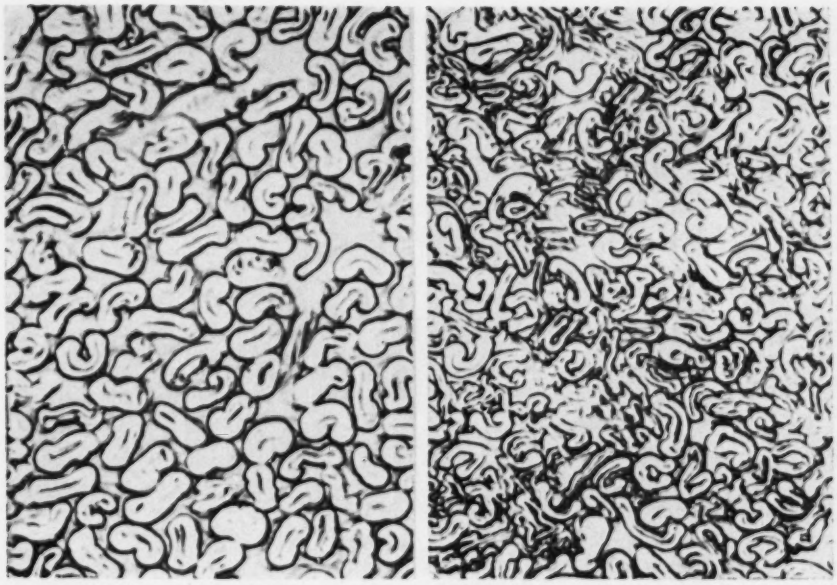
The secondary wall, the bulk of the fiber, is made up of layers of cellulose deposited daily inside the fiber during the growing period after the fiber has attained its maximum overall length of more than 2000 times its width. Figure I is a photomicrograph of a full grown single fiber from base to tip, showing the extreme length and the variability in wall thickness.

The number of growth layers which are deposited largely determines the cell wall thickness of the fiber; in the dried fiber this is taken as a measure of its maturity, the well-developed fibers having a cross-sectional shape approaching roundness and the immature fibers, a curled, shrunken appearance.

Down the center of the fiber along the entire length is the lumen, a canal containing the living substance of the cell and through which nutrient substances are fed to the fiber during the growth and development stages. When the boll opens, the cell dies and its contents dry out, leaving in the lumen a protoplasmic residue composed, for the most part, of coagulated proteins; the fiber, formerly distended by the juices, collapses and assumes the characteristic convoluted form which in cross section resembles a kidney-bean in shape.

If, after swelling in caustic soda, the lumen has a diameter of two or more times the thickness of the cell wall, the fiber is classified as immature. Tests of commercial lots of cotton show varying distribution of mature and immature fibers.

*One of the laboratories of the Southern Utilization Research Branch, Agricultural Research Service, United States Department of Agriculture.



(a) Good spinning quality *(b) Poor spinning quality*

FIG. 2. LOOKING THROUGH A MICROSCOPE AT GOOD AND POOR SPINNING COTTON YOU MIGHT SEE THESE. Cross sections of cottons showing: (a) normal mature fibers having good spinning qualities; (b) immature fibers having poor spinning qualities. Magnification 500X.

The microscope has proved to be a useful instrument in the study of problems arising in the cotton textile mill. Photomicrographs show some of the various microscopical techniques which are used in the investigation of mechanically and chemically processed cottons. Fiber, yarn, and fabric structures, mechanical and fungal damage, and the effects of chemical treatments of fabrics are demonstrated.

Mechanical Processing. It is possible to show through microscopical techniques some of the physical characteristics which are responsible for a cotton having good or poor spinning qualities. No commercial cotton sample has ever been found to be 100% mature, but it is generally considered that a normal cotton with a maturity of better than 70% will process efficiently and produce yarns of acceptable quality. When the maturity of a cotton falls as low as the 50-60% range, processing difficulties will result, as indicated by increased nepping, increased ends-down in spinning, and decreased product quality.

Figure 2 (a) represents a cross section of well-developed, full-bodied fibers whose average wall thickness is a factor contributing to the strength and behavior of the fibers during processing and ultimately to that of the finished yarn.

Figure 2 (b) is an example of flat, underdeveloped fibers, many of which break during processing.

In addition to immaturity, other

FIG. 3. DAMAGED COTTON. These longitudinal views of damaged cotton fibers are highly magnified. They show possible sources of spinning difficulties.

(a) Microorganisms *(b) Crushing* *(c) Tensile Break* *(d) Heat* *(e) Honeydew*

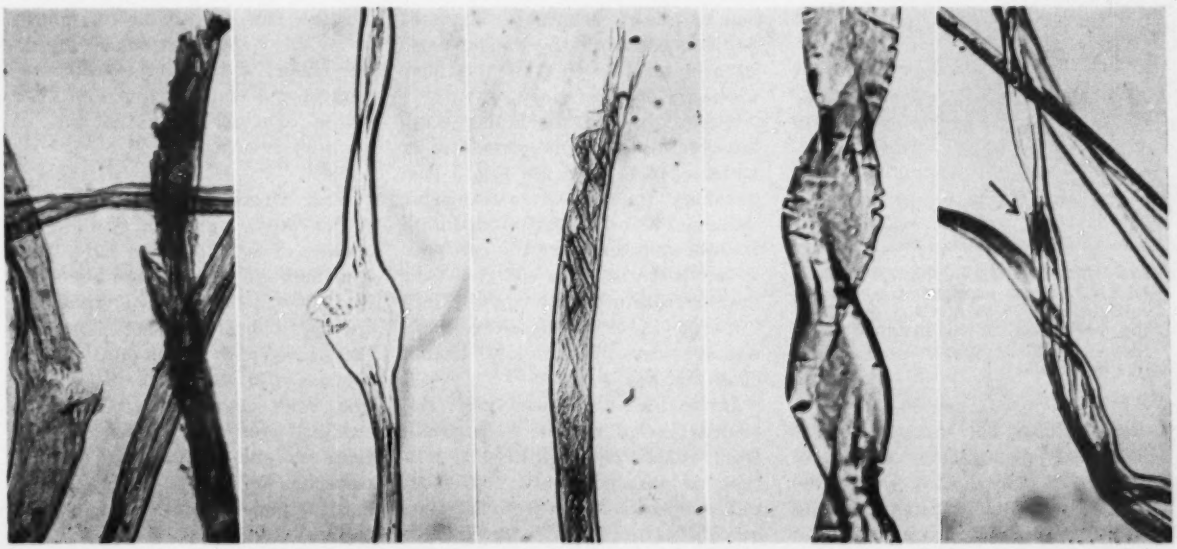


FIG. 4. END VIEW OF COTTON YARN. Cross section of a 36s yarn showing size of yarn, number, and maturity of individual cotton fibers, and distribution of airspace. Magnification 500X.

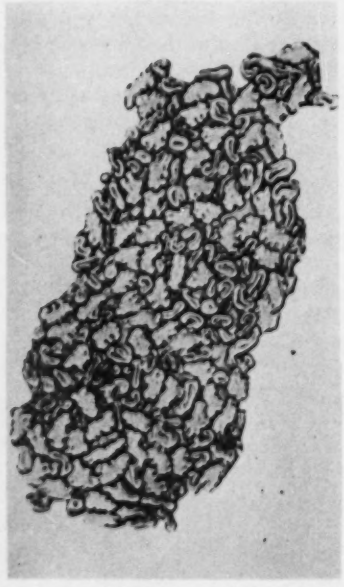
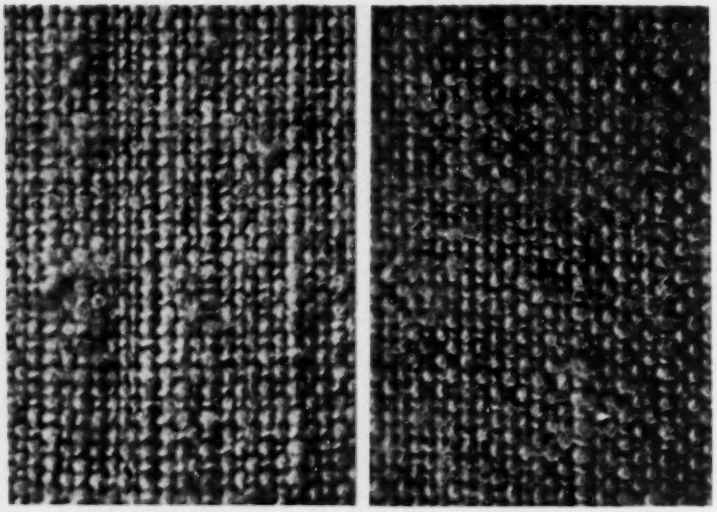


FIG. 5. LET'S LOOK AT A BLEND. Cross section of a yarn containing a 50-50 mixture of cotton and rayon. In this instance the blend is fairly uniform. Magnification 250X.



(a) Without attachment *(b) With attachment*

FIG. 6. LOOM ATTACHMENT IMPROVES FABRIC. Surface views of two broadcloth fabrics woven: (a) without special loom attachment; (b) with special loom attachment. Note improved uniformity and fewer reed marks in fabric (b). Magnification 10X.

undesirable fiber properties are frequently responsible for the production of poor quality yarns. One of the greatest losses in processing is the result of various types of damage occurring in cotton fibers.

The microscope has proved of value in demonstrating these phenomena and helping to identify their sources. For example, damage from microorganisms, although it does not necessarily affect the appearance of the cotton, lowers the tensile strength of the fiber; through breakage, the mean length of the fibers is reduced and this in turn results in a loss in yarn strength.

This type of defect can be easily recognized with the microscope, see Fig. 3 (a). With the proper stain, fungus growths in the lumen can be plainly seen and clumps of bacteria can sometimes be detected in and on the wall of the fiber around a point of rupture.

Other types of fiber damage are also readily observed: crushing or bruising of a fiber, see Fig. 3 (b), becomes apparent when stains for damaged cellulose are used; longitudinal splintering of the cell wall is characteristic in single fiber breaks from a tensile force, Fig. 3 (c); and in cases of severe heat damage the fibers show lateral cracking, Fig. 3 (d).

Honeydew, a substance deposited on plants as an exudate from aphids or scale insects, is a type of damage familiar to most mill operators. Apart from the poor quality yarns it produces, honeydew-damaged cotton, Fig. 3 (e), is even more troublesome than the others. Because of its gummy nature it causes matting, tangled fibers, and stickiness throughout all phases of processing. Simple routine methods are employed to study damage in single fibers.

With the development through plant breeding experiments, of new cotton varieties having such desirable qualities as improved fiber length or maturity, and added strength, the microscope assists in explaining the processing behavior of these new cottons in terms of such of their physical characteristics as can be evaluated microscopically. Distribution of immature fibers in the sample and relation of cell wall thickness to fiber shape are pertinent features of such observations.

Yarn Cross Section. For examination of yarn construction a cross section of an embedded yarn (Fig. 4) is made to show the number and maturity of the fibers it contains, the peripheral characteristics of the fibers, and the amount of airspace within the yarn. Blends of fine and coarse fibers can be studied and the presence, percentage, and uniformity of distribution of other fibers, both natural and synthetic, can be detected.

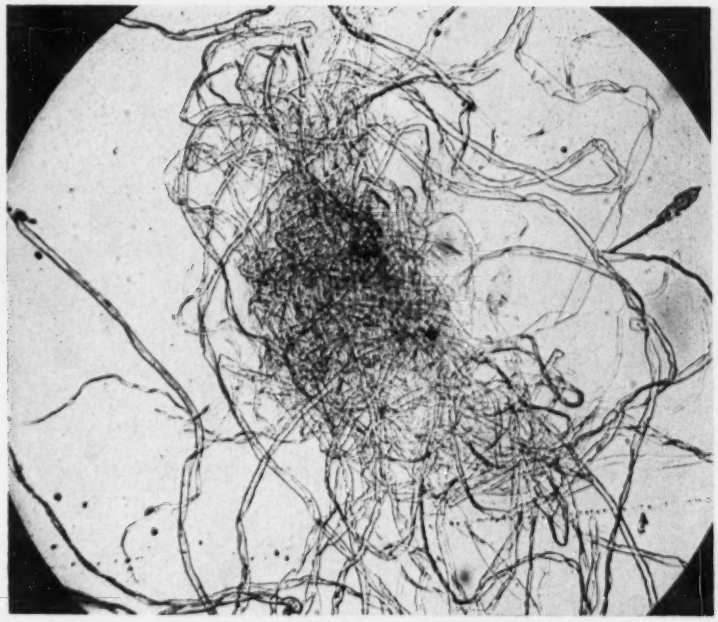


FIG. 7. THIS IS A NEP (longitudinal view of nep formation). Magnification 70X.

Figure 5 is a cross section of a yarn containing a 50-50 mixture of cotton and rayon. This sample was included in a microscopical study of blends in an effort to determine whether the larger fibers tend to migrate to the surface of the yarn. This picture shows, however, a fairly uniform blend of the cotton and rayon fibers.

In longitudinal sections made by slicing with a razor blade through a yarn embedded in a plastic medium to hold it rigidly in place, much can be learned of the yarn's inner structure. One can observe the fibers which lie at abnormally high angles to the axis of the yarn, thus contributing little to its strength, and the interfiber spaces which are related to fabric porosity.

Study of Fabrics. In fabrics, surface views through a low power microscope show compactness and uniformity of weave, as well as loftiness, the quality which gives added bulk or thickness to the fabric. The effects of new developments in textile machinery can sometimes be demonstrated in pictures of surface views taken through the microscope. An illustration of this usage is seen in Figure 6 which shows photomicrographs of two broadcloth fabrics woven without, Fig. 6 (a), and with, Fig. 6 (b), a new loom attachment developed at the Southern Regional Research Laboratory.

In fabrics of this type, the greatest contribution of the attachment is that it improves the uniformity and appearance. This is evidenced in the photomicrographs of the two broadcloth samples. Reed marks are noticeable in the sample woven in the conventional manner, whereas they have been reduced to a minimum in the other. The fabric woven with the aid of the loom attachment also shows a slight nap which gives it a softer feel and helps to increase its impermeability to air and water.

Defects such as nep formations (Fig. 7) can be determined by examining the matted material under the microscope at a higher power. Neps are badly tangled knots usually composed of flat, immature fibers which cling together throughout processing and later cause imperfections in yarns and spotty dyeing. A high percentage of immature cotton in the raw stock is often responsible for the occurrence of excessive neps in the finished yarn or fabric.

Brown stains, which are sometimes blamed on grease splashed from mill machinery, can at times be traced to bleeding from particles of seedcoat and leaf embedded in the yarns. After examination of such areas through the microscope, the mill man can see for himself that defects of this type could be avoided by proper cleaning of the cotton in the early stages of processing.

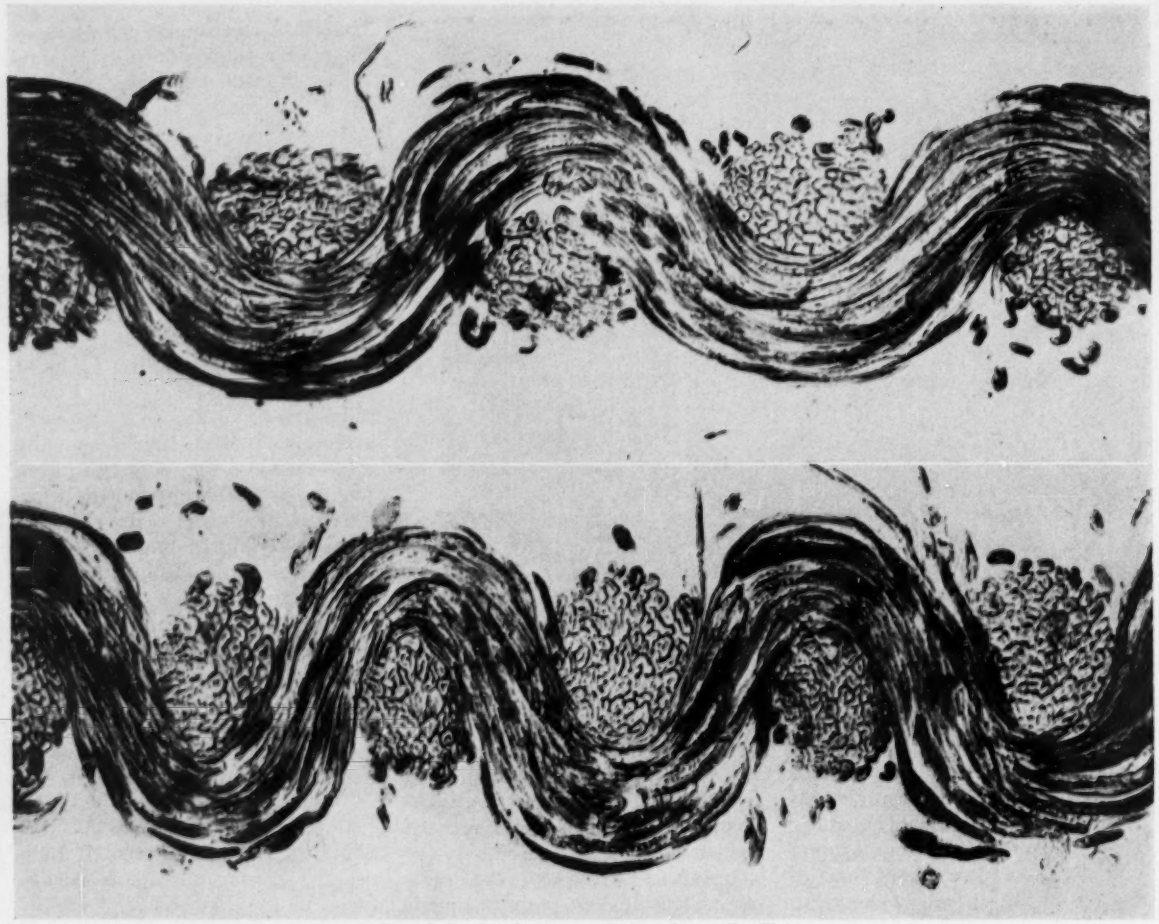
Of particular value to the textile engineer is the information obtained from microtome sections through warp and filling yarns of an embedded fabric. The photomicrographs in Figure 8 represent such slices of a fabric showing cross-sectional views of the filling and longitudinal views of the warp yarns to demonstrate the effect of water swelling in fabrics. Here it is possible to see in detail the denseness of the fabric, the regularity of the yarns, and the angles at which they intersect.

Figures 8 (a) and 8 (b) show sections of fabrics before and after soaking in water. The original geometry of the fabric seems to have changed on wetting out.

Chemical Processing. At the Southern Regional Research Laboratory, the miscroscope is used to assist in the evaluation of results of certain chemical treatments of cotton fabrics. Some additive finishes are applied to the cotton to alter the physical characteristics of the fabric, without usually effecting any chemical change in the cellulose. Resin impregnation to render the fabric crease-resistant is a process of this type.

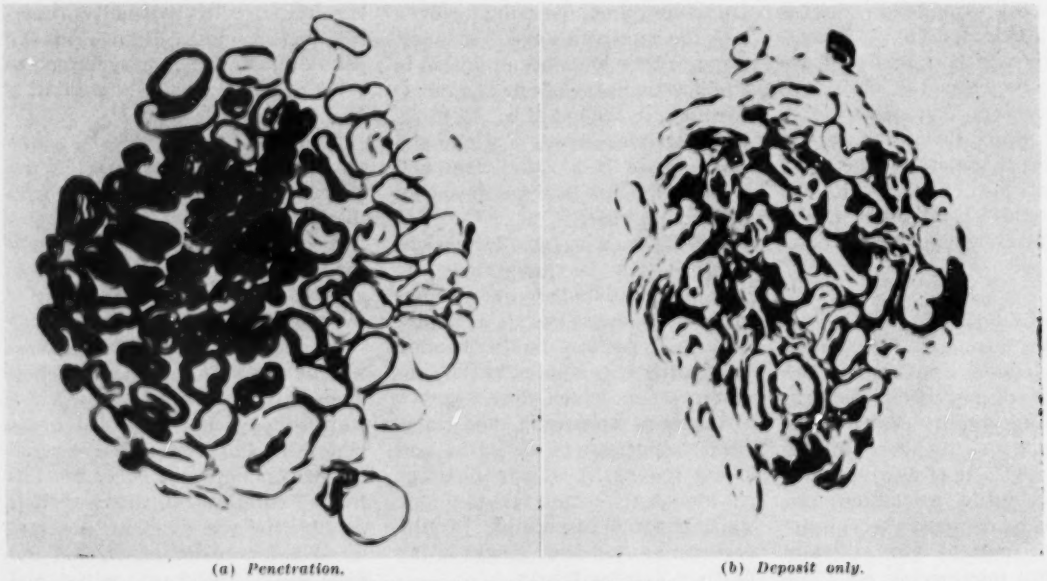
Methods of applying resins are as varied as are the results. While the chemist can measure quantitatively the percentage pickup of a chemical compound on a cloth, it is only through the microscope that he is able to see the actual location of the material.

To detect the degree of penetration of the resin, a cross section is made after the yarn is soaked in a stain which is attracted to all areas where the impregnant has entered but which does not color the untreated cellulose. In this way it is possible to see whether the material has actually penetrated the fiber walls, Fig. 9 (a), or has just been deposited among the fibers in the yarn as shown in Figure 9 (b).



Top photo: (a) Dry. *Lower photo: (b) Wet.*

FIG. 8. WATER DOES THIS TO FABRIC. Section through a fabric (across filling yarn; parallel to warp yarn) showing structure in: (a) dry state; (b) wet state. Note how wetting changes the original geometry of the fabric. Magnification 170X.



(a) Penetration. *(b) Deposit only.*

FIG. 9. HOW DOES YOUR FINISH PENETRATE THE FABRIC? Cross sections of yarns from resin-impregnated fabrics to show: (a) penetration of resin into fiber walls; (b) deposition of resin between fibers only. Magnification 500X.

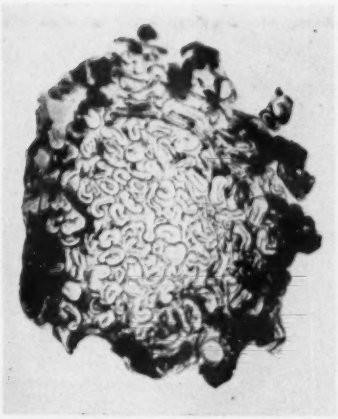
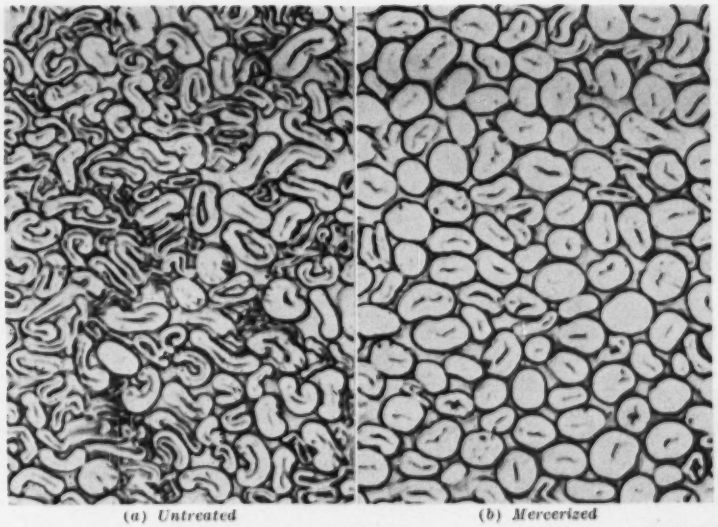


FIG. 10. CHECKING ON THE WARP SIZE. Cross section of yarn showing location of starch sizing. Magnification 250X.



(a) Untreated (b) Mercerized

FIG. 11. EFFECT OF MERCERIZING. Cross section of fibers from a sample of typical upland cotton: (a) untreated; (b) mercerized. Magnification 500X.

Warp Sizing. A similar technique is employed in the examination of starch-sized cotton yarns where iodine is applied to the cross section to stain the starch blue-black. Usually, the most desirable effect from the weaver's point of view, is obtained in starch sizing when the material enters the outer edge of the yarn only, as seen in Figure 10.

Mercerization. Microscopical techniques are used for evaluation of experimental results during the development of laboratory methods for the modification of cotton. Mercerization, a process in which cotton yarns or fabrics are treated in sodium hydroxide, causes the fibers to swell, and if tension is applied during processing, the fibers become smooth and lustrous. This treatment modifies the cellulose in such a way that the absorptive properties of the fiber are greatly improved; and when it is subsequently dyed the resulting colors are much more brilliant than in the case of unmercerized cotton. If the treatment has gone far enough it is possible to tell through microscopical examination what effect mercerization has had on the gross physical appearance of the fibers.

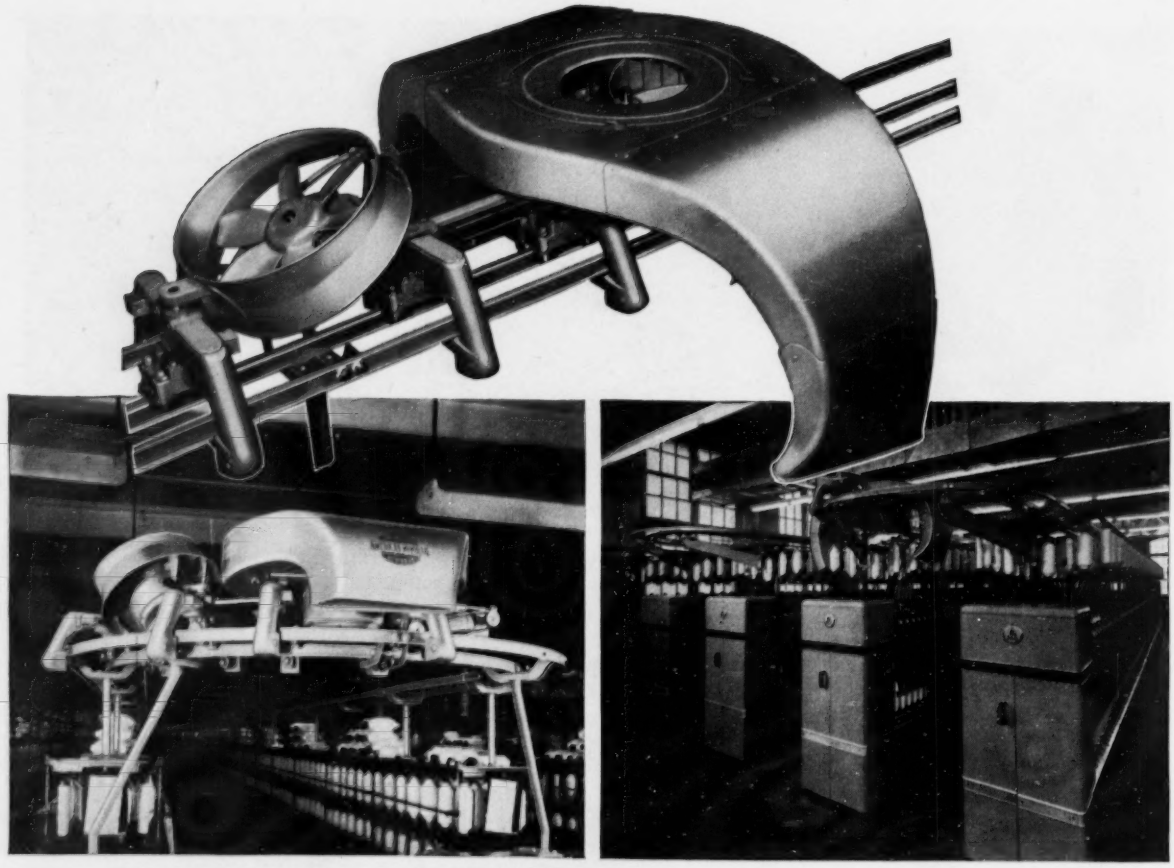
In cross section, mercerized fibers are virtually round with tightly closed lumens. Figure 11 (a) is a cross section of untreated cotton fibers; Figure 11 (b) shows the same variety of cotton after mercerization.

Partial Acetylation of Cotton. Acetylation is a treatment involving actual chemical modification of the cellulose, the extent of treatment depending on the degree of substitution by acetyl groups in the anhydroglucose units of the cotton fiber. The chemist can calculate the average extent of this effect in terms of percentage substitution, but it is through techniques such as dyeing and cross-sectioning that a visual comprehension is obtained.

By using an acetate dye that does not stain unmodified cotton and a direct cotton dye that does not stain acetate, the uniformity of the treatment can be seen in a cross section of yarn or fabric. Figure 12 is a cross section of a yarn showing partial acetylation, the darker spots representing the treated areas, and the lighter spots, fibers which are unaffected by the treatment. This type of information can be of great help to the chemist who knows theoretically what chemical changes he is effecting, but who can better understand them if he can see the way in which they manifest themselves physically.

Electron Microscopy. The electron microscope has been available as a laboratory instrument for nearly fifteen years, but its use in textiles is only about ten years old. Its applications in this field are, therefore, still in the experimental stages. While the electron microscope offers the advantage of

FIG. 12. THE PARTIAL ACETYLATION PROCESS. Cross section of a yarn from a partially acetylated cotton fabric. The darker fibers show the partial acetylation; the light fibers were not affected by the treatment. Magnification 250X.



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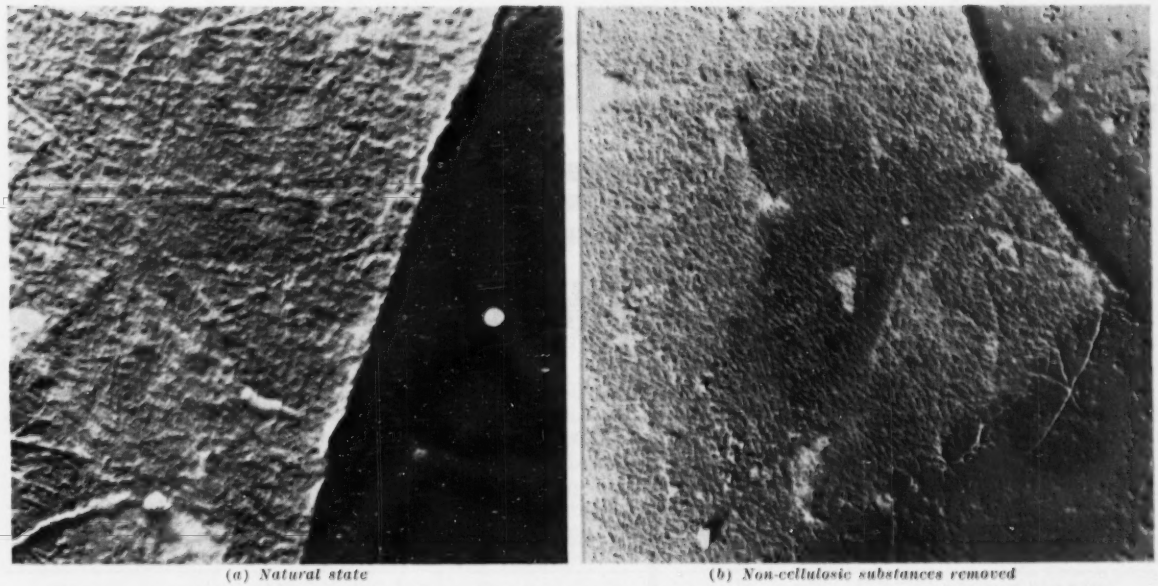
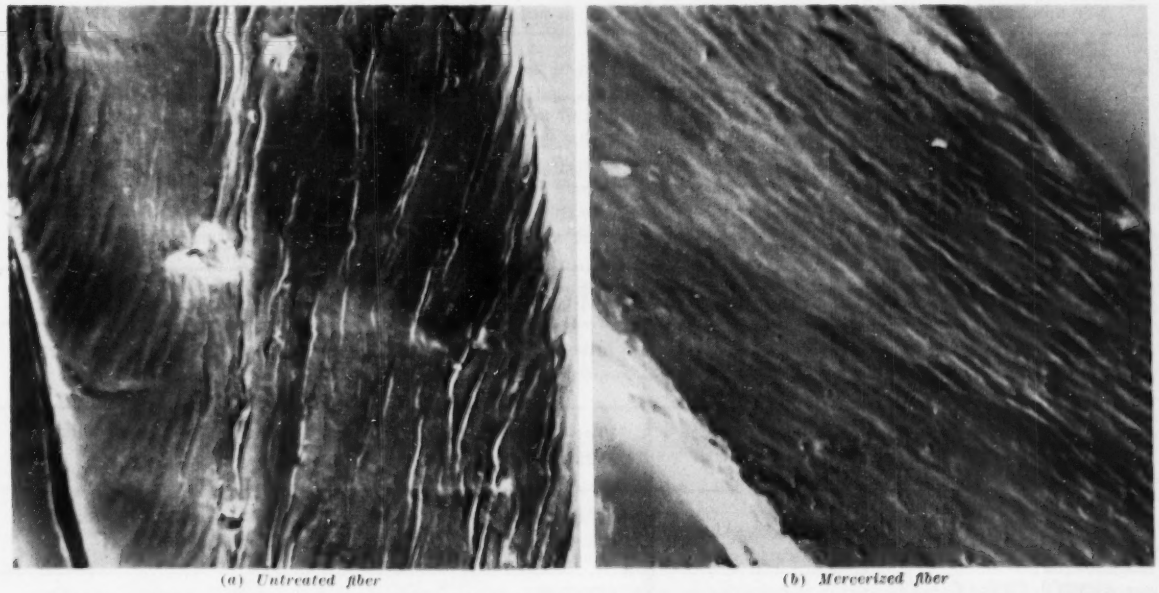


(a) *Natural state* (b) *Non-cellulosic substances removed*

FIG. 13. ELECTRON MICROGRAPHS OF SPECIMENS OF PRIMARY WALL: (a) in natural state; (b) after removal of noncellulosic substances. Magnification approximately 8000X.



(a) *Untreated fiber* (b) *Mercerized fiber*

FIG. 14. ELECTRON MICROGRAPHS OF REPLICAS of fiber surfaces: (a) of an untreated fiber; (b) of a mercerized fiber. Magnification approximately 8000X.

extremely high magnification, its chief limitation lies in the poor penetration of the electron beam through substances like cellulose. A specimen thicker than 0.5 micron cannot be observed, but in the study of cotton, techniques are being developed for isolating the various components of the fiber in fragments thin enough for examination with this instrument.

Where the light microscope shows the gross characteristics of the fibes, the electron microscope gives details of its fine structure. At the Southern Regional Research Laboratory, electron microscopy is being employed with a view to obtaining a better understanding of the architecture of the cotton fiber.

The specimen in Figure 13 (a) has had no treatment; the one in Figure 13 (b) clearly shows the cellulose network of the primary wall which has been freed of encrusting waxy and pectinaceous materials by a chemical extraction similar in effect to kiering. Studies have also been made on the effects of different bleaching treatments.

Since the whole fiber is many times too thick for examination with the electron microscope, tech-

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SUNOTEX RSO-48 For processing knitting and blanket yarns.	Has high antistatic properties. Is ideal for use where humidification is not available.
SUNOTEX TS-48 For processing dyed wool stock and yarns.	Can be scoured easily. Does not stain or develop odors.
SUNOTEX RWO-420 Used in spinning suitings, blanketing, carpeting, felts and wool blends.	Retains its outstanding scourability for long periods. The ideal replacement for lard oil—used where surface lubrication of wool is desirable.
SUNOTEX TSO-615 An inexpensive product for processing lower quality wool blends and reworked wool blends.	Has sufficient body to protect fibers. Eliminates fly and static problems.

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SUNOTEX RWO-48 A softener and plasticizer for gelatin and other binders in sizing of viscose and acetate yarns.	Provides excellent penetration and uniform plasticizing, resulting in smooth thread surfaces.
SUNOTEX RSO-48 For processing nylon and similar synthetics where static is a problem.	Provides excellent lubrication of the thread surface. It reduces static even when used in quantities of 1% or less.
SUNOTEX TS-48 Trough oil on full-fashioned machines. Also an all-purpose fiber lubricant.	Scours easily from viscose, acetate, nylon and mercerized cotton. Does not stain or develop odors.
SUNOCO FIBRLUB L-220 A nonemulsifying coning oil used in the throwing of nylon for full-fashioned hosiery.	Lubricates the sized threads, reduces "roll," increases snag resistance, prevents corrosion, produces a more uniform stitch.

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niques have been developed for making surface impressions in plastic media. These are useful for investigating topographic details of fibers. Figure 14 is an electron microscope study of replicas of the fiber surfaces of an untreated fiber, Fig. 14 (a), compared with a mercerized fiber Fig. 14 (b).

A knowledge of the structural changes occurring in chemically modified cottons may possibly give an insight into those processing phenomena which up to now are only partly comprehended. With a better understanding of what the usual treatments do to the natural state of the fiber, it should be possible to devise new treatments for the improvement of specific properties and thus to enhance the performance of cotton in many areas of the textile field.

"Better Tomorrow" Seen for Full-Fashioned Knitters

"A systematic machine replacement program assuring competitive production costs coupled with a superior product and smart merchandising techniques will guarantee the future growth and health of the full-fashioned hosiery industry." This was the concluding statement of the commentary contained in the "Statistical Survey, 1953" recently published by Textile Machine Works of Reading, Pa., manufacturers of full-fashioned knitting machinery.

Although the year 1953 was not a record breaker in point of unit volume or in point of profit, officials of Textile Machine Works prefer to look to the future and several underlying facts which in their opinion "prophesy a better tomorrow:"

1. Population growth. By 1967 it is estimated that there will be 70,307,000 women between the ages of 14 and 75, an increase of 26% over the 1953 figure of 55,894,000. The market is now beginning to grow at an increasing rate due to the rise in birth rate starting in 1940.

2. Price of full-fashioned stockings compared with price of other commodities. Because the cost of full-fashioned stockings is reasonable, the industry enjoys the broadest possible market base.

3. During the year, 87 companies closed their doors. It is assumed that these were the least competitive mills. Another possible reason for their closing may have been their inability to calculate their costs correctly. It is true that equipment in these mills averaged almost 17 years old, while the national average of knitting equipment is just over ten years.

Full-fashioned knitting machines in the United States decreased 452 last year to a total of 9017, the Survey pointed out, commenting that although the number of machines exhibits a steady decline, the productive capacity of the equipment does not show the same rate of decrease. Machine sections decreased 3½% compared to 5% decrease in number of machines. Furthermore, modern equipment is more productive.

Average age of machines was reported to be 10.04 years compared to 10.15 years at the beginning of the year. Median age of equipment was 7 years at end of 1953. 58% of equipment is postwar.

The turning point in amount of 51 gauge equipment occurred during the year, as now 45.9% is 51 gauge as opposed to 48% at the end of 1952. Growth of popularity of 60 gauge machines slowed considerably as sections of this gauge increased only from under 25% to just over 26%. 66 gauge equipment exhibited the greatest change, swelling from 1% to 4½% of total equipment in place.

Equipment in the territorial divisions of the United States has changed little from last year, although the trend over the last twenty years is quite marked, North Carolina and the South having gained at the expense of the other territories.

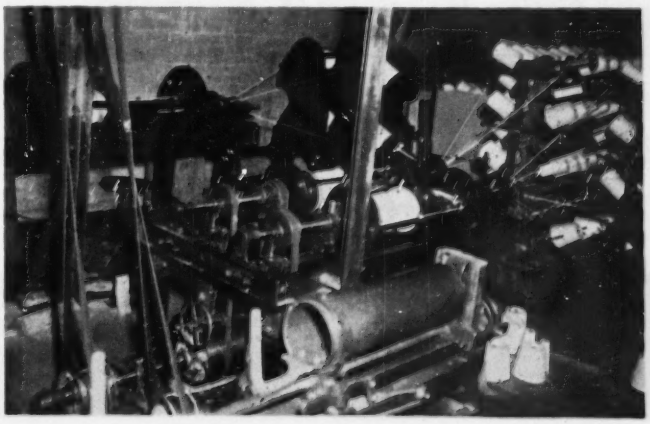
Of the mills closing last year, 57% were located in Pennsylvania, 13% in New England, New York, and New Jersey; 13% South; 10% North Carolina; 7% West.

Trend toward smaller operating units halted and reversed just slightly. 72.1% of the mills now operate ten machines or less.

1953 profits on the average were 1/8 below 1952 or 4.0% on sales and 6.6% on net worth, as compared with 3.0% on sales and 5.7% on net worth for the years 1937-40 which is considered a "normal period."

South's Oldest Operating Textile Machine?

This machine has made Hutcherson rope for over 100 years, and is still in good mechanical condition. Made by the almost-forgotten J. C. Todd Co., Paterson, N. J., it is now operating in the plant of the J. R. Newell Co. at Carrollton, Ga.



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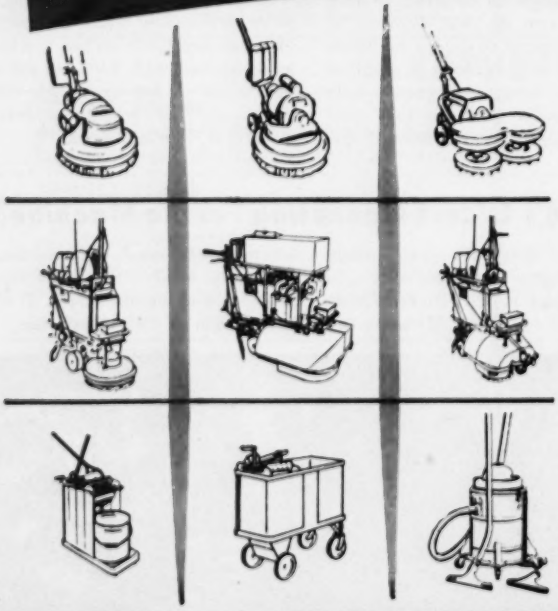

However much a maintenance man may want to do a good job, and at the same time show savings in labor costs, he's *stymied* if the machine is too small, or too large, or is otherwise unsuited to the job. Different floors and areas call for different care and equipment. That's why *Finnell makes more than a score of floor-maintenance machines.* From this complete line, it is possible to choose equipment that is correct in size as well as model . . . that provides the maximum brush coverage consistent with the area and arrangement of the floors.

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Maintain your Motors

also how to dry out wet motors

By K. A. Richardson
Bibb Manufacturing Co., Macon, Ga.

A GOOD maintenance procedure on polyphase induction motors is the periodic checking of the air gap between the rotor and the stator with a feeler gauge to detect worn bearings that might permit the rotor to rub the laminations of the stator.

A very slight rub will generate sufficient heat to destroy the coil insulation. This will cause a burned out motor, although the motor may have proper protection as far as controls are concerned.

Cleaning and Its Supervision. Cleaning is very important in the maintenance schedule. To get best results on cleaning, have definite cleaning schedules and following through on them. In some plants, the cleaning is under direct supervision of the electrical department. In others, it is done by the regular mill cleaners.

When the cleaning is not under the supervision of the electrical department, the electrician should continually make spot checks. It doesn't take long to cook the insulation in a motor when the air passages get clogged and prevent proper cooling, especially if the motor is running 24 hours a day under full load.

Air Cleaning. Cleaning should be done with air that is as dry as practicable and at pressures not in excess of 50 psi. Care should be taken to blow the motor in such a manner that the dirt will not be driven into the windings or the insulation be blown off the windings.

Where oil has worked out around the bearings on to the frame, it should be wiped off with a cloth (not waste), or in severe cases should be washed with mineral spirits, being sure no lint is left around the bearing housing to wick out the lubricant.

Foreign Matter in Motor. In some cases, where the motor is mounted on or near the floor, trouble is experienced by yarn falling to the floor and then being sucked into the end of the motor and winding on the shaft. In this case, the yarn will wind next to the bearing housing, causing enough friction to create heat on the housing, overheating the same, which in turn causes the grease to break down in the bearing.

In some cases, the yarn will actually work under the grease seal and lock the balls in the bearing, causing immediate failure. We have eliminated this trouble on one particular type of winder by making a screen of quarter inch mesh hardware cloth to fit over the air intakes on the brackets. Although this screen covers with lint very quickly, we find that it does not retard the air enough to cause overheating.

Lubrication of Motors Essential. Lubrication ranks as one of the most important items of maintenance. Lack of proper oiling and greasing will produce disastrous results to the motors. We have found from experience that an excess of oil or grease can be about as bad as too little. Too much oil will get into the windings, causing deterioration of insulation and will also cause dust and lint to literally stick inside the motor, making it practically impossible to blow it out with air.

Excessive grease will also cause ball bearings to heat and in some cases break down the grease, causing the bearing to fail. This makes it necessary to set up a definite schedule and follow it.

Automatic Oiler. We find that the use of automatic oiler with clear plastic or glass cups is our best solution for oiling the ring

(Continued on page 227)

Abstract of an address to the Conference on Electrical Application for the Textile Industry, Georgia Tech, Atlanta, April 15.

Carrier helps another mill plan for a bigger future

Go down the list of Carrier air conditioned mills and you'll find the most important names in textiles, Berkshire, Deering-Milliken, Duffy, Greenwood, Robins and Textron are just a few. ▪ Now another famous company has chosen Carrier. Carrier air conditioning *with* refrigeration keeps the climate right the year 'round in Stonecutter Mills Corporation's new plant at Spindale, North Carolina. The system includes Carrier Centrifugal Refrigeration to give Stonecutter control of both humidity *and* temperature. ▪ Stonecutter, building this new rayon spinning mill, had tomorrow in mind. Capacity today is 5000 spindles. Eventually it will reach 10,000. The air conditioning system is

designed so that it can easily handle the doubled mill capacity with only a few minor changes. ▪ Another noteworthy feature of this air conditioning system: its unique flexibility. Temperature throughout stays constant, yet relative humidity can be varied to the proper level for different operations anywhere in the mill. ▪ Whether your mill is old or new or still-to-be, you can make it more efficient by installing Carrier air conditioning *with* refrigeration. Carrier's vast experience in the exacting business of air conditioning a textile mill is as close to you as your telephone. Call your nearest Carrier office. Or write directly to Carrier Corporation, Syracuse, New York.

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More than 200 turned out for this

STA NIGHT MEETING

and talked about

caring for card clothing

increasing cot life

quill replacement

slasher roll covers

shuttle and check strap life

Staff Report

THE South Carolina Division of the Southern Textile Association met Thursday evening, April 15, at Ware Shoals, S. C. Riegel Textile Corporation was host for the meeting which attracted more than 200 mill men who came to hear speakers on selected topics.

The care of card clothing, suggestions for getting the most life from cots, synthetic slasher rolls, and the most common causes of shuttle wear were the subjects discussed by guest speakers John M. Reed of Ashworth Bros. Inc.; Al Littlejohn of Armstrong Cork Co.; Bill Morgan of Dayton Rubber Co.; and M. J. Tuten of Draper Corp., respectively.

A questionnaire was sent to member mills before the meeting, and the answers were compiled and printed for distribution when the group convened. Highlights of the questions and answers by mail are as follows:

Grinding Cycle. Hours between grindings ranged from 160 hours to 650 hours; however, almost half of those reporting ran cards 240 to 280 hours between grindings.

Out of 18 mills, 15 ran only cotton, and 3 ran some synthetics.

A large majority agreed that the type of stripping system used, pounds per hour carded, hours run between grindings, and the type of fibers being processed all affect the life of card clothing.

Check Points Affecting Life of Card Clothing. 16 items were sug-

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Para-dichlorobenzene • Ortho-dichlorobenzene

gested as check points for extending the life of card clothing as follows:

(1) Proper installation of clothing
(2) Proper grinding and setting
(3) Excessive grinding frequency
(4) Heavy grinding
(5) Grinding too long at one time
(6) Correct grinding roll speeds
(7) Setting too close
(8) Use good emery fillet
(9) Proper maintenance
(10) Correct grinding stands, used properly
(11) Stripper roll settings too deep when hand stripping
(12) Lumpy laps
(13) Running tails of laps through card
(14) Oil dropping or migrating to clothing
(15) Worn bearings
(16) Excessive humidity

The life expectancy of cylinder and doffer clothing was 5 years to 20 years, with little agreement on the limitations, although it was agreed that 8 to 10 years was the limit on life of flats and lickers-in.

The buffing schedule on synthetic cots ranged from 3 months to 1 year; while the interval on cork cots varied from 10 weeks to 6 months.

17 mills expressed preference for synthetic cots, and one preferred cork cots.

Buffing schedules for cots varied from 3 months to 12 months, although the interval for most mills was 7 to 12 months.

Check Points Affecting Cot Life. Those answering the question suggested the following check points on items affecting cot life:

(1) Proper maintenance of buffing equipment
(2) Migrating oil
(3) Correct weighting of rolls
(4) Traverse roving the maximum length
(5) Buffing too deep to cut
(6) Match rolls for size to prevent excessive buffing
(7) Hard ends
(8) Spinners using knives
(9) Improper use of stand hook by spinner
(10) Correct humidity for proper drafting
(11) Correct twist multiplier in roving
(12) Keep frames clean

Quill Replacement. In figuring the annual replacement of quills based on the number of spindles in operation, two mills figured 1¼ to 2 quills per spindle, seven mills figured 2 to 3 quills per spindle, and two mills figured 4 quills per spindle per year. One mill figured on a basis of 4% replacement per year.

It was agreed that ½ to 1 warp bobbin per spindle was sufficient for annual replacements. One mill reported using aluminum warp bobbins, and figured no replacements in 5 years.

Eight mills reported using the adapter type spindle, and all of these reported long bolster life with this type of blade.

Slashing. Out of 17 mills reporting on slasher roll coverings, 7 used wool blankets, 4 used rubber back and wool front rolls, 3 used yarn wound rolls, 2 used wool and nylon covered rolls, and 1 mill used rubber rolls entirely.

Life of Slasher Roll Covering. According to those reporting, rubber rolls ran 2 to 3 years without replacement, yarn-wound rolls lasted 6 to 7 months, nylon-and-wool rolls ran 550 to 884 hours before requiring replacement, and wool-covered rolls lasted 120 hours to 536 hours.

Suggestions to increase the life of slasher blankets were:

(1) Use rubber back
(2) Use rubber back and front
(3) Use nylon and wool
(4) Use burlap on back roll
(5) Keep roll and weight under 500 lb
(6) Keep rolls properly leaded with good cloth next to roll
(7) Metallize rolls with ⅛" layer of bronze
(8) Break-in roll covering properly
(9) Have slasher tender remove lap properly
(10) Boil and re-use blankets

Shuttle Life. Shuttle life on E model looms operating at 160-163 ppm varied from 1821 hours to 2000 hours; at 172 ppm, the figures varied from 1500 to 5000 hours.

On X model looms operating at 148 ppm, shuttle life was 2180 hours; at 170 ppm, 5000 hours; at 182 ppm, 1500 hours.

Shuttle life on X-2 looms operating 172-176 ppm varied from 1440 hours to 1925 hours; at 180 ppm, 3536 hours.

On XD looms operating at 160 ppm, shuttle life varied from 1628 hours to 2924 hours.

K looms operating at 176 ppm had an indicated shuttle life of 2640 hours.

L looms operating at 125 ppm, required shuttle replacement every 2000 hours.

XP looms running 144 ppm needed a new shuttle every 1446 hours; at 154 ppm, every 2614 hours.

XM looms at 182 ppm required a new shuttle every 2099 hours.

EM looms at 172 ppm needed a new shuttle every 2015 hours.

XL looms at 106 to 122 ppm had an indicated shuttle life of 1712 hours.

Shuttle Check Points. Suggested check points to extend shuttle life were set forth as follows:

(1) Proper loom alignment
(2) Good harness settings
(3) Well polished reeds
(4) Frequent inspection
(5) Minimum of power
(6) Parallel picker
(7) Check shuttle guards
(8) Check to see that quills ring

(Continued on page 233)

W. M. PITTENDREIGH of Ware Shoals, division chairman, conducted the meeting and introduced the speakers.

"The General Radio Strobotac®
has definitely been beneficial
to our organization . . ."

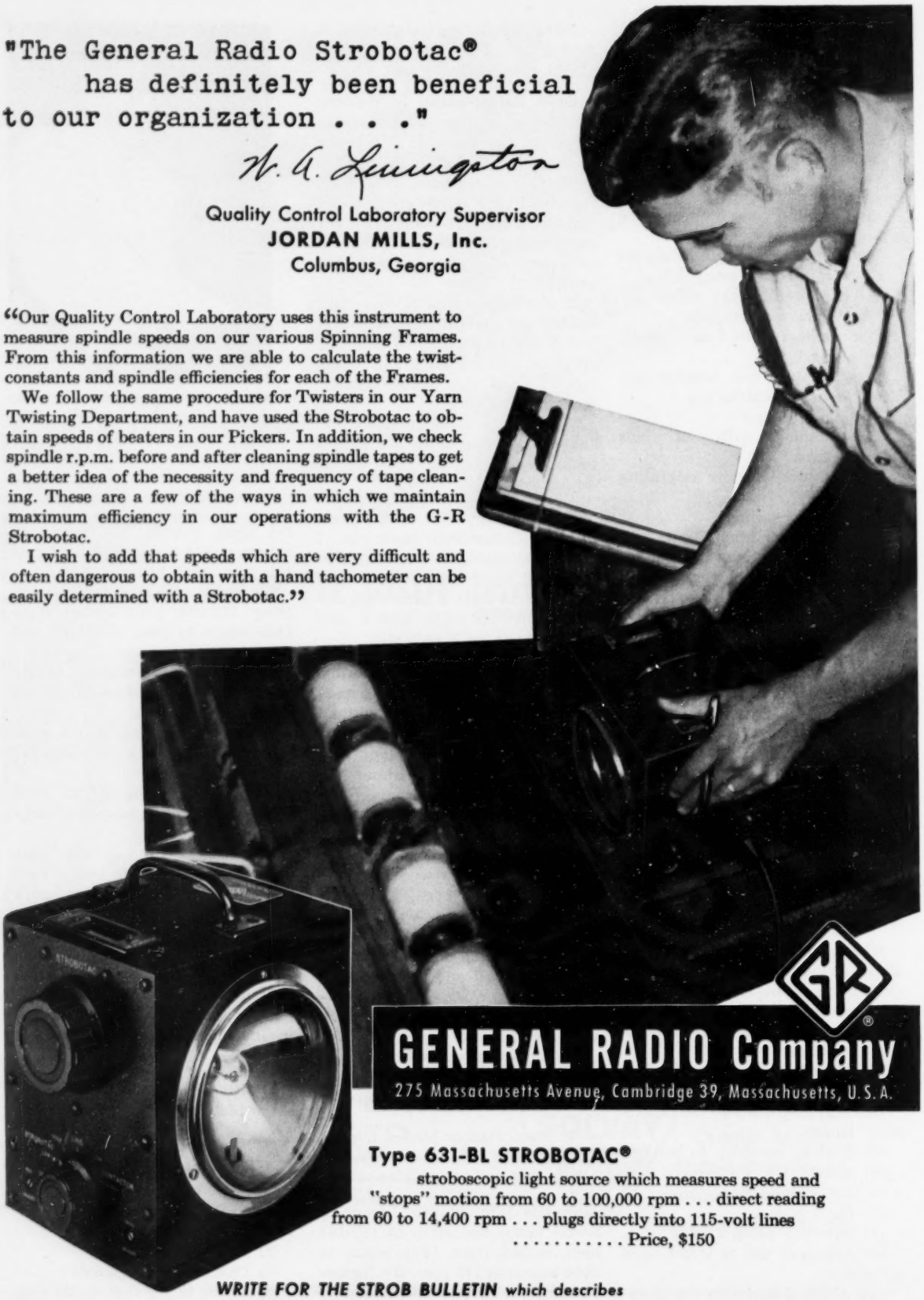
W. A. Livingston

Quality Control Laboratory Supervisor
JORDAN MILLS, Inc.
Columbus, Georgia

"Our Quality Control Laboratory uses this instrument to measure spindle speeds on our various Spinning Frames. From this information we are able to calculate the twist-constants and spindle efficiencies for each of the Frames.

We follow the same procedure for Twisters in our Yarn Twisting Department, and have used the Strobotac to obtain speeds of beaters in our Pickers. In addition, we check spindle r.p.m. before and after cleaning spindle tapes to get a better idea of the necessity and frequency of tape cleaning. These are a few of the ways in which we maintain maximum efficiency in our operations with the G-R Strobotac.

I wish to add that speeds which are very difficult and often dangerous to obtain with a hand tachometer can be easily determined with a Strobotac."



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stroboscopic light source which measures speed and "stops" motion from 60 to 100,000 rpm . . . direct reading from 60 to 14,400 rpm . . . plugs directly into 115-volt lines
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***WRITE FOR THE STROB BULLETIN** which describes G-R's Extensive Line of Stroboscopic Equipment*

EXCLUSIVE

The Depressed Recession

By Ringgold Arden

ABOUT TWO years ago the textile industry began to drift into what was euphemistically referred to as a "recession." The term "depression" was in very bad odor during the New Deal Era, because the New Dealers had definitely abolished depressions, which were manifestations of the horse-and-buggy era which we had left far behind. It was always very distressing to a New Dealer to find one of the old horse-and-buggy-day bogies sitting on the front stoop, but his distress could be ameliorated considerably by re-christening the bogie with some cheerful New Deal name. Thus, a depression became a recession. We in the textile industry have been laboring under the delusion for some time that we were in a depression, but some of the left-over, trained seal economists of the New Deal Era are still around, insisting that this is merely a recession and that we should think nothing of it. How a man who is losing three or four cents a pound on all of the yarn and cloth he sells, goes about thinking nothing of it, has not been covered by any of these economists.

Perhaps, therefore, we should say that the textile industry was in a Depressed Recession. This is just as painful as the old-fashioned kind of depression, but maybe it will sound better.

Another segment of the economy which has been enjoying a recession is farming, and the only reason that the farmers aren't in the middle of a depressed recession is because the Farm Vote is such a glamorous thing that the politicians have been busily buying surplus farm products and storing them away for future use, or perhaps gifts to some distant people, and money squeezed out of other segments of the economy — including the textile industry — has been used to prop up the prices of farm products sufficiently to keep the Farm Vote from boiling over. Apparently there is no such thing as a Textile Industry Vote.

If we had a Textile Industry Vote, thousands of warehouses would have blossomed out all over the land, and now be bulging with vast stores of every known kind of textile product that some distressed manufacturer was happy to sell to the Government at a fancy price. The money for building the warehouses and buying the surplus textile products could possibly be squeezed out of somebody else, but if there was a Textile Industry Vote, there would probably be a Steel Industry Vote and an Automobile Industry Vote, and everybody would be selling what he had for too much money at somebody else's expense.

This is a variety of economic lunacy known as Communism. It is the system in which the Government promises to give everybody everything he needs, by taking it away from somebody else who swears he needs it worse than the man it is to be given to.

Many arguments have been advanced to prove that farming is different, and that the economic plight of a farmer who insists on raising more stuff than the market can absorb, is entirely different from the plight of the yarn mill which spins more yarn than anybody wants. The best arguments which have been produced in favor of special protection for the farmers are those which are delivered to the ballot boxes on Election Day. Other arguments set forth that the farmer is helpless and must take whatever is offered to him for his products in the market. The farmer is also said to be dumb, since he hasn't got any better sense than to keep on producing stuff that the people in the market are not willing to pay for. It is extremely doubtful, however, that the farmer is any dumber than the spinner or weaver who keeps on running five days a week to lose three or four cents a pound on everything he produces. In fact, the farmer has been smart enough to jockey the rest of the population into guaranteeing him a good price for what he produces, and the farmers are therefore enjoying only a mild recession instead of a depressed recession.

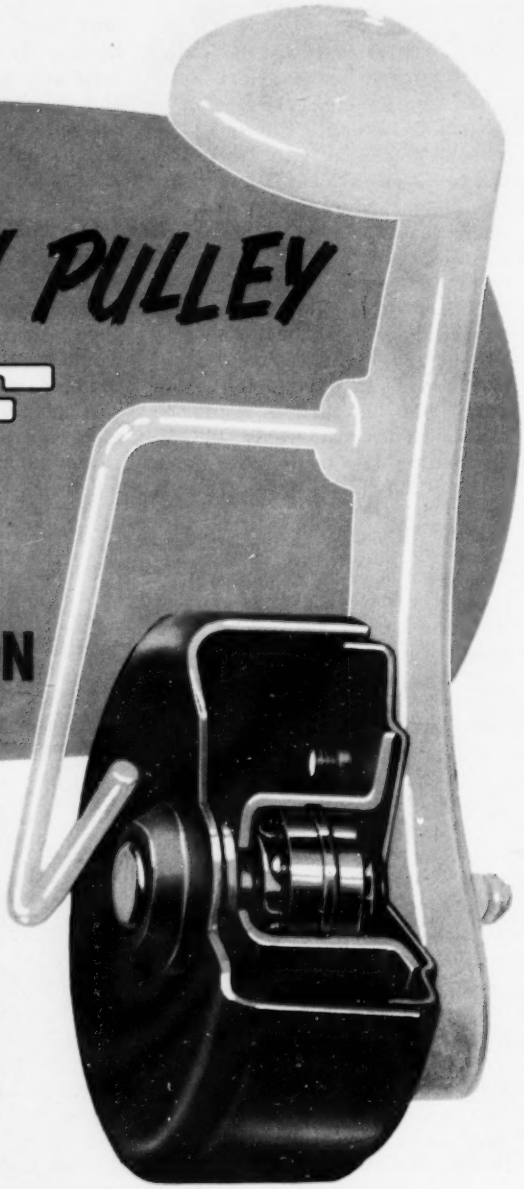
Somebody has figured out that it would take a solid freight train, stretching all the way from New York to Los Angeles, and paralyzing the entire country by blocking grade crossings, to hold the corn which the Government bought and didn't want, and has now stored to keep the price of corn too high for cotton mill folks who are fond of grits and cornbread. The Government has gone into the purchase of wheat even more recklessly, and it would take another train running all the way from San Francisco to New York and back to St. Louis to hold two and a fourth billion dollars' worth of our money invested in wheat that nobody seems to know what to do with.

Imagine another freight train stretching from New York to Chi-

A NEW TENSION PULLEY

From SKF

8 WAYS BETTER
LOW IN COST
PROVEN IN OPERATION



Available for immediate delivery, this new SKF Tension Pulley is an improved design, supplementing the one originated by SKF in 1933.

Here are its 8 cost-cutting advantages:

1. *Designed around a tilt-proof double-row SKF ball bearing.*
2. *Low in first cost, low in operating cost, low in maintenance cost.*
3. *Strong all-steel construction for long life.*
4. *Needs lubrication only once every 3 years for 3-shift, 6-day operation. Grease fitting makes re-greasing easy.*
5. *Because it is the inner ring of the bearing that rotates, lubrication is more efficient and capacity is higher.*
6. *Fly and dirt proof.*
7. *Smooth running, almost noiseless.*
8. *Two screw fasteners make it adaptable to various type brackets.*

SKF, the pioneer, still leads with more efficient anti-friction textile units. Ask your nearest SKF District Office for all the facts—and have your SKF Field Engineer tell you about three *other* important SKF Textile Bearing Specialties . . . the SKF Pendulum Arm . . . the SKF Ball Bearing Top Roll . . . the SKF Roller Bearing Spindle. 7537

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—manufacturers of **SKF** *and* HESS-BRIGHT® *bearings.*

SKF®
TEXTILE BEARING SPECIALTIES

cago full of socks, and another from Chicago to Omaha loaded down with denim, and then one from Omaha to San Francisco full of combed and carded yarn. By the time freight cars were loaded with all of the surplus textiles that our industry could turn out if the Government thought we were farmers, the railroads would have to borrow enough money from the Government to build enough new cars to put the steel mills back on full time and restore prosperity. If that didn't turn the trick, the necessary expenditure of billions of dollars for grade crossing elimination certainly ought to do it.

However, since there is no Textile Industry Vote, and we are going to have to stand on our own feet and fight our own battles, we might just as well face the fact that we are in a depressed recession, and that unless another war of considerable proportions should suddenly break out, we are going to stay in this condition until enough mills give up the ghost to balance production and consumption.

This brings up a pet subject that we have been harping on for a good many years: The subject of the modernization of our industry. Those plants which invested their wartime profits in machinery and general improvements are now in a position to fight for survival on even terms with other good plants, while the mills that were not put in good physical condition are at a hopeless disadvantage.

It is possible that many of the mills which did not spend money for modernization have more cash in the bank to tide them over a depressed recession than the mills that spent the money for machinery, but since these obsolescent mills will lose money so much faster than the other ones, they must all go broke in time. We have seen a considerable number of textile plants falling by the wayside during the past year, and all of the signs point to a great many casualties this year. With few exceptions, these casualties will probably be in the ranks of mills that have not been fairly well modernized.

By Modernization, we refer not only to machinery, but to meth-

Visual Survey Profitable to Employer and Employees

"Workmen who are not aware they have defective vision may be unintentionally doing poor work and turning out inferior products," was the opinion voiced recently by Dr. Rex H. Wilson, medical director for The B. F. Goodrich Company, Akron, Ohio. Speaking before the Occupational Vision Conference at the University of Maryland in Baltimore, Md., Dr. Wilson pointed out that of all the human skills required of an operative, that resulting from vision is certainly one of the most important.

"Not only do poor products result from faulty vision on the part of workmen," he said, "but ironically enough, final inspectors, usually older and more experienced employees, may also have deficient vision, and, as a result, may approve substandard workmanship and products.

"Industrial managements have a wonderful opportunity of doing a job of preventive medicine, of improving employee relations and morale through use of visual surveys conducted on a voluntary, confidential basis."

Dr. Wilson described a visual survey conducted by his own company which revealed that a general increase in the need for wearing corrective eye glasses, with increasing age, occurred among all groups tested. In ages above 50, more than 90 per cent required corrective glasses and more than 53 per cent of those taking the examination needed assistance.

"On the basis of such surveys," Dr. Wilson concluded, "industrial managements should start on the basis of the value to employees, but the results are rewarding in better quality products and more efficient production."

Advance Preparation Saves Dyeing Time

Boil-off of raw silk piece goods is a time consuming operation. It involves flat folding, stick-looping, boiling-off, washing, extracting, opening, beaming, and drying. Very often, boil-off schedules are such that delays occur that further prolong preparation for the actual piece goods dyeing. Generally the dyehouse must figure ten days to two weeks for this preparation.

Brooks Piece Dye Works, New York City, has devised a procedure of performing these preparatory steps in advance of receiving their customers' dye orders, and placing the boiled-off goods in storage so that delivery time is saved to the extent of the boil-off time; deliveries can be made in a few days instead of two weeks.

Silk chiffons and marquisettes are the most practical cloths to process in this advance preparation system. Denser cloths tend to bruise under the extra handling required.

Pre-Boil-Off Steps. Silk piece goods usually measure 50 to 60 yards. After the grey goods are indelibly marked along the selvage at several places to identify the lot and piece, the first advance preparation step is taken. This consists of flat folding or flapping, and is mechanically done so that the entire piece is laid up in folds that are about a yard wide. The folded goods are looped on one selvage with enough cord to allow boil-off sticks to be inserted.

Boil-Off. The looped silk goods are threaded with sticks and suspended in the boil-off bath. This is done in a soap solution in a false bottom box at 200-210 F; the time will vary, but it averages about two hours for the sheer types being prepared. The silk gum and soap are washed out of the goods after boil-off, the moisture is extracted in a centrifuge. Individual pieces are opened out to their full width and sewn together, followed by beaming and drying.

Storage. The boiled-off, dried, and tubed piece goods lengths are identified with hank tags and taken to the store-room. When dye orders are received by Brooks, the goods are pulled off the shelf and routed directly to the dye boxes.

Six Common Errors in Plant Site Selection

Selecting a new plant site is not only one of the most important and critical steps for company management to take, but also one of the most complex, according to A. Kingsley Ferguson, vice-president, Walter Kidde Constructors, Inc.

Errors in plant site selection seem to fall into a pattern, he declared. Based on evaluations of his company's operations over a period of years, the following are most common:

1. *Lack of thorough investigation and consideration of factors involved.*

This happens most often among companies whose managements know "instinctively what's best for us." Their shortcoming is that they generally make their selection on the basis of a single factor. If they've been brought up in sales, it's likely to be on the basis of distribution; if they're production men, they're more likely to pick their sites on the basis of raw material availability or labor supply. Even though they are competent management men, they often fail to realize that several minor factors, when compounded, can outweigh a single major factor.

2. *Personal likes and prejudices of key executives or owners over-riding impartially established facts.*

3. *Inertia of key executives to move from traditional, established home ground to new and better locations.*

4. *Moving to areas already or about to be over-industrialized.*

In some instances, plant sites are selected on the word-of-mouth recommendation of one executive to another.

Locating in over-industrialized communities is one of the hazards which must be recognized by management when a site is selected in a community which offers incentives such as tax exemptions, rent-free buildings, etc. Nonetheless, company executives often accept these incentives without obtaining also a definite understanding that the community will not continue to induce new companies to come into the area to the detriment of existing plants.

5. *Preference to acquire an existing structure (usually at an imagined bargain) which is improperly located or designed for the most efficient production.*

There are three pitfalls to avoid when considering a move of this kind: first, be sure you've got a good structure that won't cost you as much to rehabilitate as it would cost to erect a new building; second, be sure the building you buy will accommodate your manufacturing process and flow of materials at a minimum materials handling cost; third, be sure the location of the building is right for your business.

6. *Choice of a community with cultural and educational standards so low that key administrative and technical personnel eventually accept employment elsewhere.*

For the higher type employee, the new community must offer the cultural stimulation to which he and his family are accustomed.

ods and processes, and there are still great numbers of textile plants in the United States trying to operate with archaic and impossible work loads.

One of our friends was remarking last year that the plant with which he was connected had at least twice the amount of labor it needed, and that in some departments there were five times enough people to do the work. This man has been striving with his union to bring about a realization of the doom hanging over that huge business if that kind of thing continues to prevail, but the union, as usual, opposes adamantine resistence to any attempt to institute realistic work loads.

Quite recently another gentleman told about how in one of his mills he had cut the number of employees exactly in half without any impairment of efficiency. This was a big mill and an old one, and over the years, the unions had insisted on an extra man here and an extra woman somewhere else, until finally the plant was literally stuffed with needless employees. The attempt to readjust the work loads at this plant resulted in a long and bitter strike, which the members of the union lost, because the only alternative was for them to lose the plant. In flush and carefree times, it may be possible to run a plant with twice the labor needed, but in times like these the plant which is not geared for the utmost efficiency can be expected to start running out its stock any time.

It might be appropriate here to put in a word of sympathy for the people who own a plant which they would like to modernize, but can't afford to on account of the policies of the labor racket which controls their help. This is a sort of thing that has not bothered southern textile mills very much, but has been a vital influence in New England and other parts of the North.

The people who own the plant realize the need for modernization, and have the desire and the money to go ahead with it, but the labor leaders make it impossible for them to benefit by modernization, and it would naturally be foolish to spend money without benefit.

If a man is determined to loaf most of the time, and his union is able to protect him in that determination, he might just as well loaf watching an old machine run as a new one. The only logical reason for putting in new machinery is to make enough money through its use to pay for the machines and return a reasonable profit after they are paid for.

These labor racketeers have ruined whole cities, like Fall River, New Bedford, Lowell, and Lawrence. While there were many bullheaded and retrogressive manufacturers in all of these centers, there were also people who were willing and anxious to modernize their plants, but were warned by the racketeers not to do it. Some that went on anyway and did it, learned the hard way that it didn't pay where people are determined not to use high productive machinery at its full capacity.

TIPS ON WOOLEN AND WORSTED CARD CLOTHING

CARD CLOTHING

The type wire and foundation are determined by the characteristics of the fiber to be carded and also the machinery upon which it is to be processed.

CARD WIRE

1. Card wire is a hi-carbon steel wire made to exacting tolerances which include uniformity in gauge and temper, with a combination of hardness, ductility and toughness to resist fatigue caused by repeated flexing which it undergoes in the carding action.

2. Card wire is usually manufactured in four shapes as follows:

a. Round wire. This type is universally known and used in most carding operations.

b. Double convex wire — e.g. 28/32 — is elliptical in shape with a four size differential between the coarse and fine size. It is used in cases where it is desired to increase the strength of the wire in its working direction and still maintain a relatively fine point.

c. Single convex wire — e.g. 12/24 — is found more often on lickerins and feed rolls of woolen and asbestos cards. The working point of this wire is produced by cutting, rather than grinding, and has a saw tooth appearance.

d. Angular wire is a pear-shaped wire used for heavy work, as for example in tumblers, feed rolls and napper rolls.

3. Card wire can be furnished cadmium plated and also in iron, brass and stainless steel for special applications.

FOUNDATIONS

1. Card clothing foundations are composed of a varying number of plies of fabric, usually in conjunction with a low stretch cotton or linen warp which gives added strength to the foundation and prevents excessive stretch. Strength and stiffness are acquired by adding additional plies. Under certain conditions it is desirable to add a special face to the above, such as:

a. Wool face — used in extremely severe carding operations, such as are encountered in the asbestos and carpet industry. It gives added strength to the foundation and acts as an additional support for the wire.

b. Felt face — has advantages which include less loading, easier stripping, less stripping waste and less susceptibility to "jams." A felt face with a rubber insert or impregnated felts have an even greater ability to withstand rough treatment.

c. Rubber face — this is mainly used in the worsted industry where the stock is practically free of oil and where moisture is present.

2. D. C. Flexifort — is composed of the following four plies: cotton, linen strings, cotton warp woolen, cotton. Additional plies added as required.

3. Leather — is still used to a large extent in foundations for fancies, rings, feed rolls, lickerins, etc.

RELATIONSHIP OF WIRE TO FOUNDATION

1. As a rule, the heavier the work the coarser the wire; and thus, the heavier the foundation. Naturally, the converse is true; light or fine work demands a fine wire in a lighter foundation.

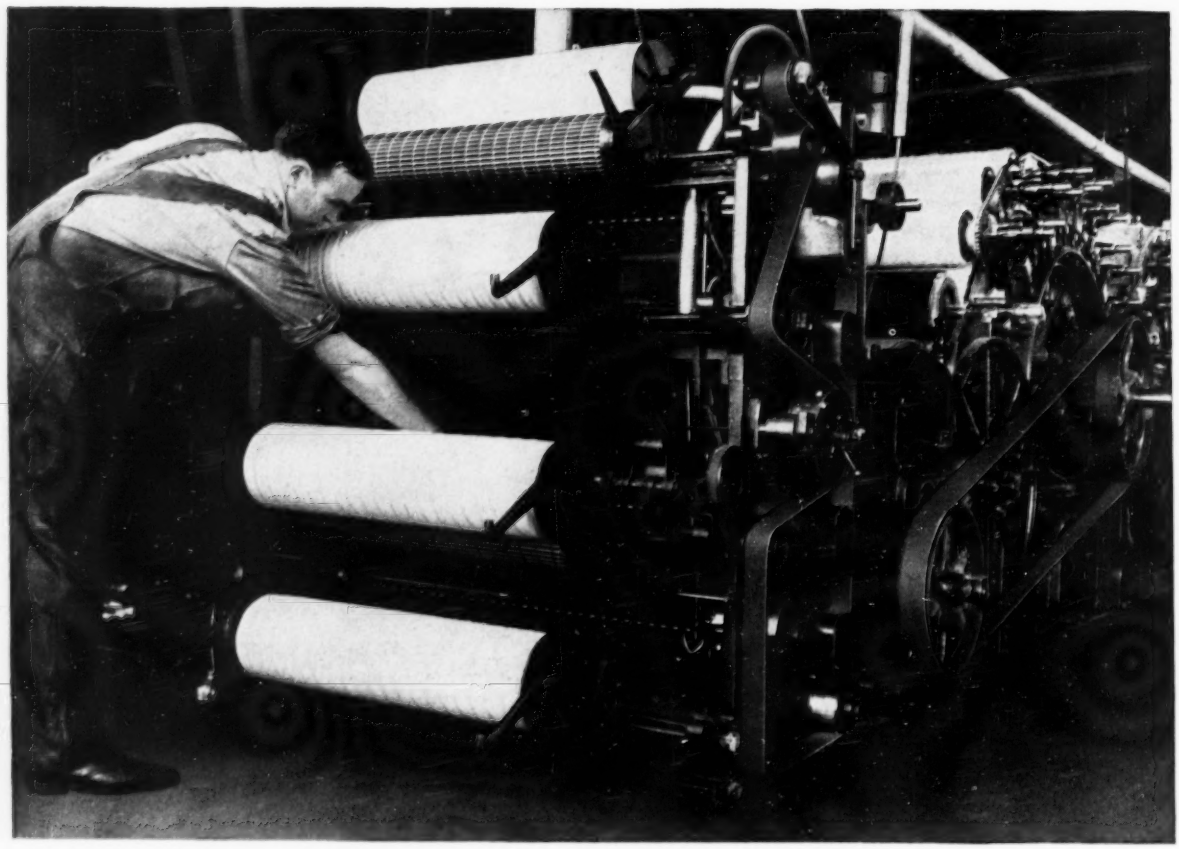
2. Heavy wire, #22 to #28, generally requires a six, seven or eight ply foundation. Heavier foundation helps prevent the wire from being set back and thus losing its pitch during the carding of coarse stocks; for example, carpet stock.

3. Finer wire, #36 to #30, usually requires a four or five ply foundation, as one too heavy, in combination with a fine wire, reduces the flexibility so necessary to good carding and results in the breaking out of the wire at the foundation.

4. Unless otherwise specified, card clothing is furnished with the standard setting (points per square inch) for the size wire requested. Deviation from the standard is usually a dangerous practice due to the fact that, if the setting is too open, the stock will not be sufficiently carded; and if too close, there will be a definite tendency to roll and pill the stock.

NOTE: *Reprints of these tips will be furnished, free of charge, on request to Ashworth Bros., Inc., Fall River, Mass.*

. . . please turn the page ▶



QUALITY? PRODUCTION?

Many woolen and worsted mills have improved the one and increased the other after adopting our recommendations. Perhaps you can do likewise.

All you have to do to find out is to ask us to send a practical card man to inspect your cards and card clothing. You may be using the wrong clothing or your card settings may be wrong. In any case our man will tell you the facts and you can make your own decisions.

Inspection of cards is only one of hundreds of problems which you and your employees have to think about. We pay men to do and think of nothing else. It is logical therefore that they can, in many cases, save mills' time and money and improve the quality of card output.

Write us at Fall River for an appointment. No obligations.

ASHWORTH BROS., INC.

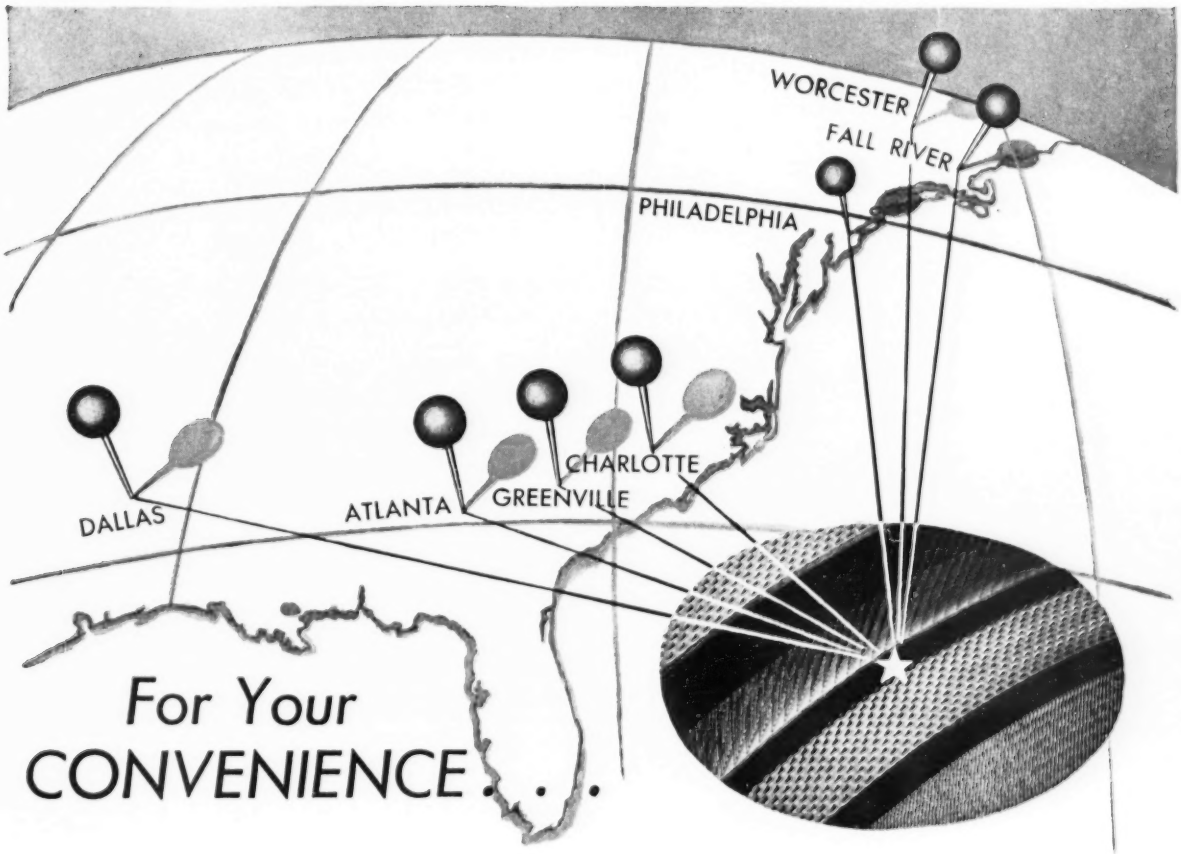
American Card Clothing Co. (Woolen Division)

Fall River*†‡ Worcester† Philadelphia*†‡ Charlotte†‡
Greenville*†‡ Atlanta†‡ Dallas†‡ (Textile Supply Co.)
Los Angeles 62, Calif. (E. G. Paules, Representative)

*Factory †Repair Shop ‡Distributing Point

3 FACTORIES • 6 REPAIR SHOPS • 7 DISTRIBUTING POINTS

NO CARD CLOTHING IS ANY BETTER THAN THE SERVICE BEHIND IT



3 FACTORIES • 6 REPAIR SHOPS • 7 DISTRIBUTING POINTS

Three factories (Greenville, Philadelphia and Fall River), six repair shops (Greenville, Charlotte, Atlanta, Dallas (Textile Supply Co.), Philadelphia and Fall River) and seven distributing points (Greenville, Charlotte, Atlanta, Dallas, Philadelphia, Worcester and Fall River) make Ashworth Card Clothing and Ashworth Service *conveniently* yours.

Nearly a century of manufacturing experience makes Ashworth Card Clothing *dependably* yours.

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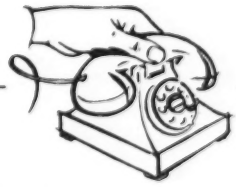
Card Clothing for Cotton, Wool, Worsted, Silk, Rayon and Asbestos Cards and for All Types of Napping Machinery, Brusher Clothing and Card Clothing for Special Purposes. Lickerin Wire and Garnet Wire. Sole Distributors for Platt's Metallic Wire. Lickerins and Top Flats Reclothed.



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Ashworth CARD CLOTHING

Platt's Metallic Wire for COTTON or WORSTED CARDS

Sold by

Ashworth

Offers 3 POINT PROFIT PROGRAM

Platt's Metallic Wire for your cards, in place of flexible card clothing, is suitable for certain classes of work on cotton, worsted or synthetic fibre cards. Its suitability for YOUR purposes should be determined by consultation with us.

It offers the following 3 point profit program:

1. Increased production.
2. Marked decrease in stripping.
3. Elimination of grinding.

Let us analyze your carding problem to see if Platt's metallic wire for your cards will make money for you.

ASHWORTH BROS., INC.

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3 Factories • 6 Repair Shops • 7 Distributing Points

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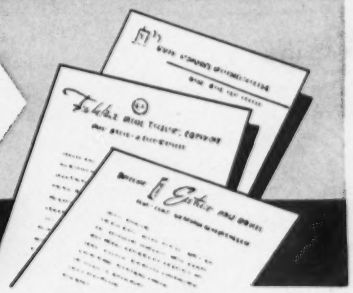
Clothing for Cotton, Wool, Worsted, Silk, Synthetic Fibre and Asbestos cards and for All Types of Napping Machinery. Brusher Clothing and Card Clothing for Special Purposes. Lickerin Wire and Garnet Wire. Sole Distributors for Platt's Metallic Wire. Lickerins and Top Flats Reclothed.

HOW OTHER MEN MANAGE

• Letters to Editor • Technical Discussion •
• Manufacturing Briefs • Kinks & Short Cuts • Comments from Readers •



Write to the Editors!

Readers are invited to make use of this section for further discussion of published articles, or for discussion of problems arising in the plant. Names will not be used without permission. Payment is made for practical articles or for letters containing manufacturing information.

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Full Bobbins Assured with Let-Off Attachment

EDITOR TEXTILE INDUSTRIES:

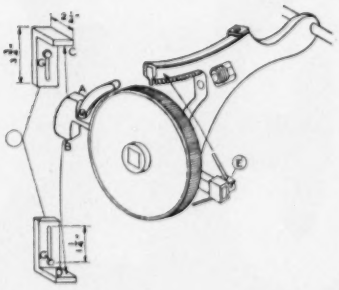
In our spinning department, an attachment was devised for the let-off motion on Whitin frames to eliminate most of the problem of keeping the picks set for proper build.

On the conventional let-off, the number of picks is determined by setting two steel collars on a rod at points that will give picks desired. From time to time lint collects around the rod at the collars, causing the stroke to be shortened and the pawl to take too many teeth in the ratchet wheel. These extra picks accelerated the doffing cycle, and the bobbins became full in less than the eight hours they should have run.

This condition brought about a constant reshuffling of doffers' schedules as well as some difficulty in production at the spooler (due to the fact that the smaller bobbins spooled in less time than the full ones).

We solved the problem by making two L-shaped castings which perform the functions for and replace the rod-and-collar arrangement. Instead of setting the collars on the rod, we now set the castings (see accompanying sketch).

The L-shaped castings are bolted to the inside of the head of the frame with 5/16" bolts. The castings are located directly behind the ratchet lever and the ratchet wheel. The heads of these bolts (G in illustration) are on the outside of the frame head, thereby



making them easily accessible to frame fixers for adjustment. The back of the ratchet lever (A and B in illustration) comes in contact with the castings (at C and D in illustration).

We are now using the back side of the ratchet lever, there is less leverage, and this arrangement is less sensitive than the rod and collars which were formerly mounted on the opposite side. During actual operation, the ratchet lever (A and B) moves up and down between the castings with builder motion and strikes surfaces (C and D) on the castings. Thus, the desired picks per traverse can be simply inserted by moving the castings up or down as desired.

An additional alteration was adopted to prevent the ratchet lever from deviating from the desired path of travel. A round piece

KINK CONTEST!

$100 will be awarded the winner.

Send your entry now! This contest ends July 15, 1954.

Every kink, short-cut, time-saver, or quality improvement suggestion entered in the contest will be paid for immediately upon acceptance. The $100 award will be made as soon as all entries are judged.

The contest rules are simple:

► All contributions must be postmarked not later than midnight, July 15, 1954.

► No limit to the number of entries an individual may submit in any one contest.

► All entries paid for upon acceptance — no waiting. Extra payment for photographs that are usable. Extra consideration is also given kinks accompanied by legible pencil sketches or drawings.

► Entries must not have been published previously.

Send your contest entry to:

Editor TEXTILE INDUSTRIES, 806 Peachtree St., N. E., Atlanta 5, Georgia.

the Weaver's Friend

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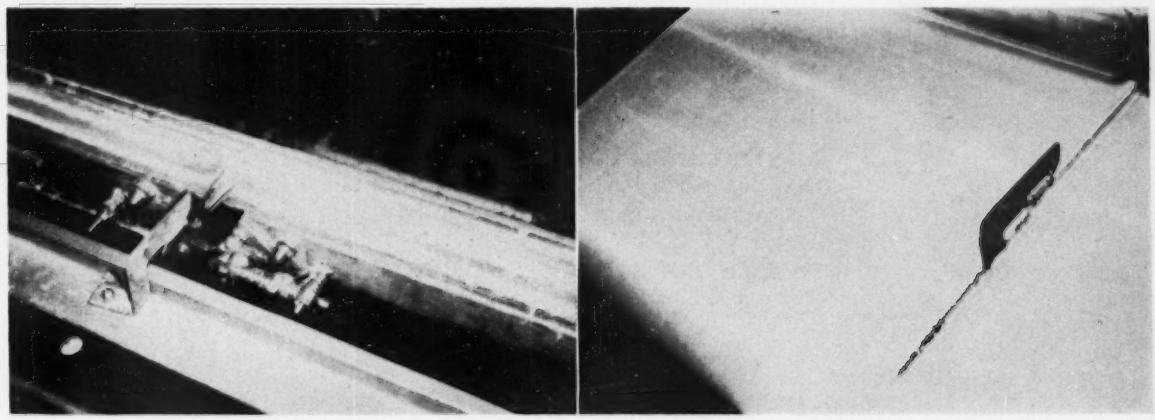
of steel ¼-inch in diameter and four inches long was bent in the center to form a "V". This piece was welded to the ratchet lever adjustable slide (E in illustration) at the point formerly occupied by the steel rod of the conventional let-off. The addition of the "V" keeps the ratchet lever in the correct path of travel.

Several advantages have been noted for the L-shaped castings. For instance, the castings do not slip. The small collars formerly used were held in place by set screws, and under the pressure constantly thrust upon them, there was a pronounced tendency for these set screws to become loose and slip. In some instances doffers unintentionally bumped the rod with a doff box, thereby bending the rod and altering the desired picks.

The attachment now in use on our frames was installed by our own fixers at a cost of approximately $1.60 per frame, including labor and parts. Performance of the frames has been notably improved by the new attachment.

CONTRIBUTOR No. 8684

Make This Center Cutter for Weaving Narrow Fabrics on Wide Looms



EDITOR TEXTILE INDUSTRIES:

We have devised a center cutter for use in making a light glass fabric of 56 picks of 2/900 Fiberglas, 19" width. Our looms are 50" wide, so we made the cloth 38" wide and cut it down the center.

12 ends of fine nylon ply yarn were used for the center edges. Then we made the cutter as shown in the accompanying illustrations. The cutter works well and is made from a 10" piece of 1½" x 3/16" flat steel stock, bent to shape. A ¼" hole is bored, tapped, and threaded in center of the breast beam. A half-inch slot is cut in this part of the cutter for setting. Two 3/16" holes are bored in the other end and tapped to take a small piece of 1" x ½" x ¼" steel stock which acts as a blade holder.

A razor blade is then inserted in whatever position is desired and tightened in place. When one part gets dull, it can be adjusted up or down until the entire cutting edge becomes dull and is ready to be changed.

CONTRIBUTOR No. 8681

Question on Weaving Glass Cloth

EDITOR TEXTILE INDUSTRIES:

We are planning to weave some heavy spun glass fabrics for use in the chemical and electrical fields. Their weights will be in the 1 to 3 lbs/sq yd range. A typical construction is:

40 x 28
25/2 spun glass warp
50/2 spun glass filling
38" width
Crowfoot weave

We have Modified D Draper looms and XD Drapers. Can any of your readers advise which of these is preferable for weaving glass fabrics of the type described? Any other information on the type of equipment we will need or on the troubles we may expect to encounter will be greatly appreciated.

CONTRIBUTOR No. 8662
(Canada)

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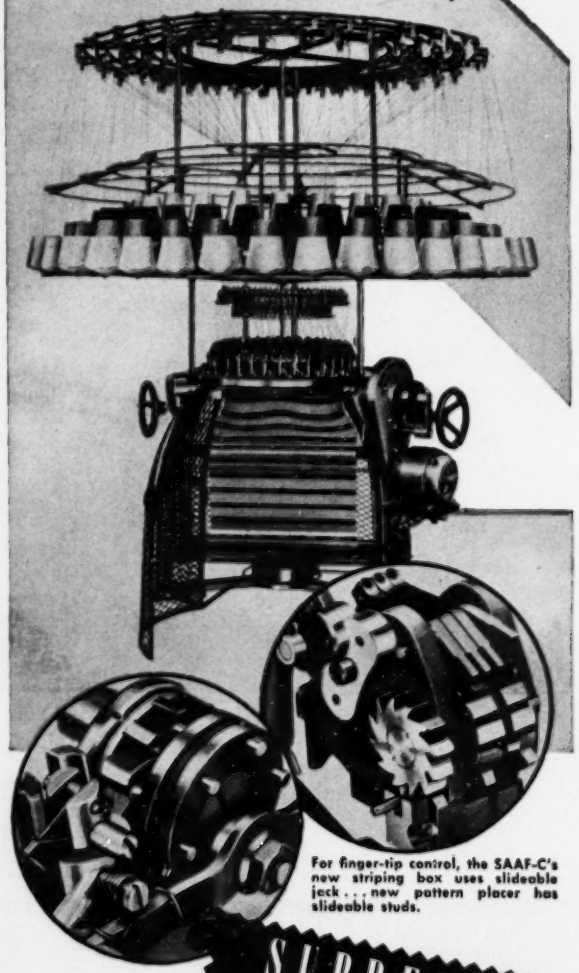
AGAIN!

SUPREME ENGINEERING

multiplies knitting efficiency with this new striper...

MODEL SAAF-C

New, "One-Machine Knitting Mill" Has 32 Striping Feeds... Doubles Production... Gives Greater Pattern Variety... Unprecedented Convenience and Safety



Supreme engineering has a reputation for cutting cloth production costs by multiplying machine efficiency. The SAAF-C variable striper and pattern placer is the newest advance in that successful record.

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NEW "STEP-DESIGN" YARNSTAND (PAT. PEND.) BOOSTS EFFICIENCY, SPEED AND SAFETY

Holds 128 cones, each clearly visible and easily accessible. Sufficient headroom for knitter to work beneath stand without stooping or bending. Rugged, stationary anti-vibration construction facilitates faster cylinder speeds, assures greater safety.

NEW STRIPING BOX DESIGN SIMPLIFIES SETTING

Design drum has been redesigned to permit sure, simple, manual setting... without screwdriver or wrenches. Adjusting studs have been replaced by a slideable jack which remains permanently in the drum and is easily shifted by hand to engage the proper striping finger. Eliminates misalignments. More compact design gives operator better view and easier access.

NEW PATTERN PLACER DESIGN GIVES FINGER TIP CONTROL

No tools needed to set pattern placer. Slideable studs, permanently self-retained in design drum, provide easy, finger-tip control of operation.

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Each striping box has exclusive new scissor-type cutter which is positive and foolproof.

IMPROVED KNITTING ELEMENTS SYSTEM

Protects production quality. Eliminates interference from needles in welt position which causes "skips" or drop stitches in some 3-position pattern work.

MANY OTHER FEATURES

This quick look at the SAAF-C cannot cover all of the outstanding design and construction features embodied in this amazing machine. To get complete details contact Supreme, today.

For finger-tip control, the SAAF-C's new striping box uses slideable jeck... new pattern placer has slideable studs.

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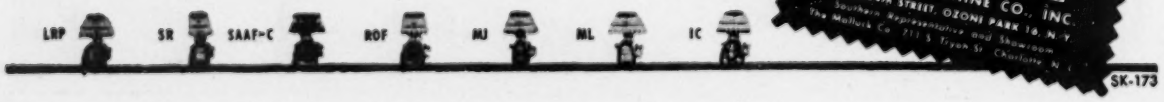


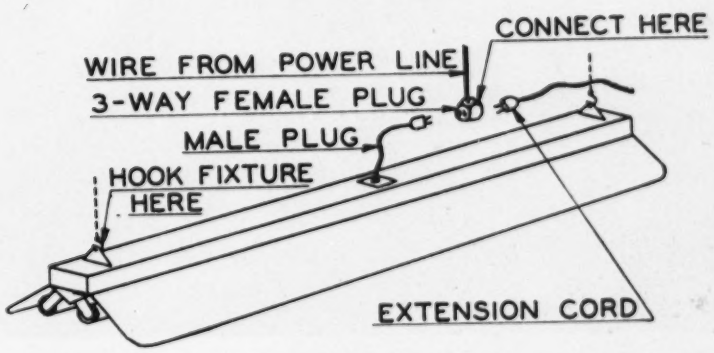
SK-173

Detachable Fluorescent Fixtures Make Cleaning Safer

EDITOR TEXTILE INDUSTRIES:

A short time ago we had to install fluorescent light fixtures and drop plug outlets to accommodate extension lights. An examination of the problem revealed that the fixtures had to be washed occasionally, thereby creating an electrical hazard upon applying the cleaning fluid. It appeared that the best way to clean the fixtures was to take them down. This would mean a lot of work for the electrician or maintenance man.

The problem was solved at the time we installed our drop plug extensions. Instead of connecting the wires directly to the fixtures, we inserted a male plug which was wired to the fixture. A three-way female plug was connected to the wire from the power source.



The fixtures were suspended from the ceiling on chains with open hooks on the end to engage hookeyes in the fixture. Now the simple procedure to remove the fixture is to unplug the wires and unhook the fixture. By using a three-way female plug, we have two additional electrical outlets for any extensions we may need. Also, we saved the cost of extra wire and outlets as well as time and labor.

CONTRIBUTOR No. 8679

What Are the Practical Limits of the J-3 Slubber?

EDITOR TEXTILE INDUSTRIES:

We should appreciate the experience of other mill men with regard to the finest hank roving that it is practical to run on Model J-3 10 x 5 slubber (Saco-Lowell). What is the correct weight of sliver to use with the set-up and what is the maximum draft with 1 1/32" cotton?

CONTRIBUTOR No. 8221

EDITOR TEXTILE INDUSTRIES:

In reply to the question asked by CONTRIBUTOR No. 8221, I have prepared a table (see accompanying box) with sliver weights, drafts, and final hank counts which in my opinion could be run on the type of four-roll system mentioned in the question. The idea is that for finer sliver weights higher drafts could be used.

I suggest that CONTRIBUTOR No. 8221 should use my figures for comparative purposes only because the figures have not actually been proved in production in our plant.

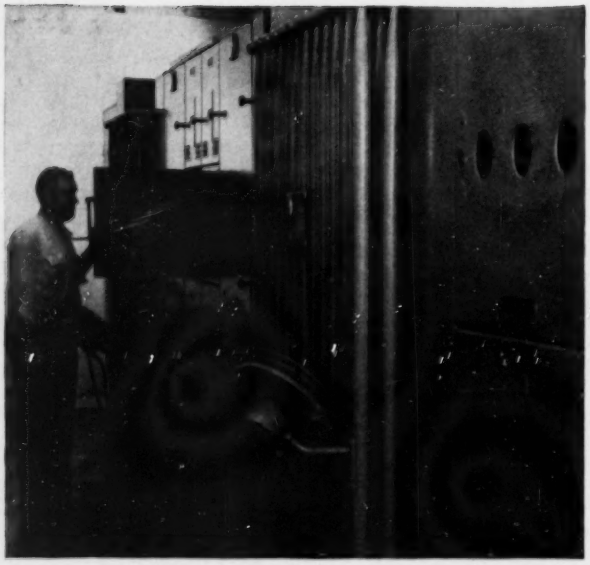
A booklet on draft and gear tables for Model J-3 roving frames is available from Saco-Lowell Shops. CONTRIBUTOR No. 8661

Sliver Grs./Yd.	Sliver Counts	Total Draft	Break Draft	Delivered Hank Cts.
40	.208	19.7	3.62	4.1
45	.185	18.3	3.55	3.4
50	.166	17.1	3.5	2.8
55	.151	16.3	3.45	2.46
60	.139	15.6	3.41	2.17

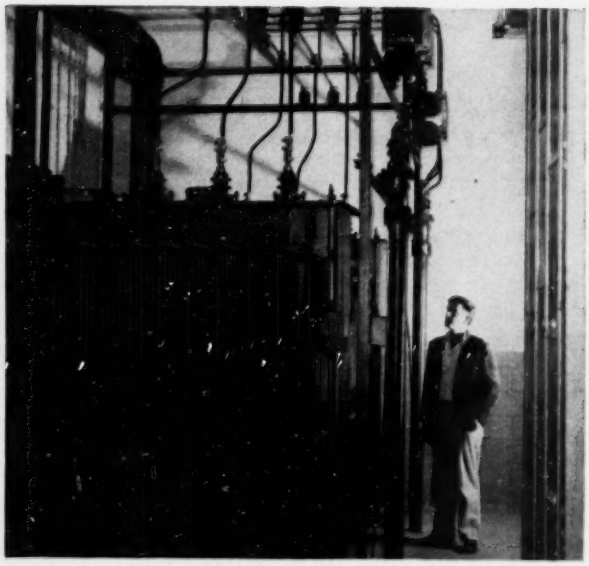
ENGINEERING REPORTS:

ECONOMICAL, DEPENDABLE POWER GENERATION is supplied at Dan River Mills' Schoolfield mill in part by this new G-E 7500-kva turbine-generator. Incoming steam enters at 600 lb pressure, exhausts at 100 lb for process use in dyeing ranges and tenter dryers. In addition, this modern textile mill also purchases utility power.

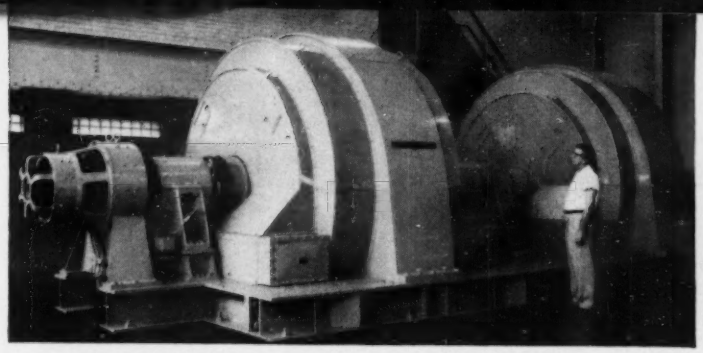
$7-million addition at Dan River powered by flexible General



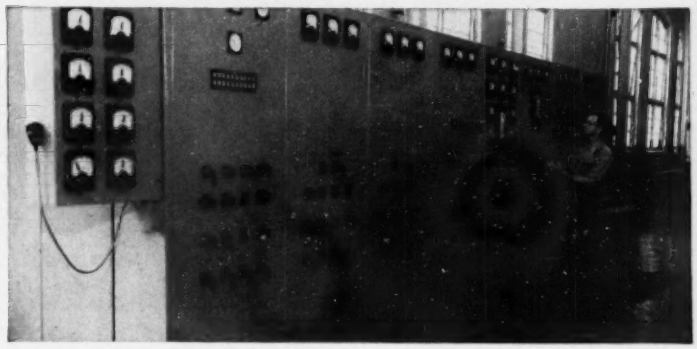
POWER FOR FINISHING and bleaching is provided by compact G-E load-center unit substation, rated 1000 kva, 6900/600 volts, 60 cycles. Factory-wired, it saves installation costs.



POWER FOR FILTER PLANT, at suitable voltage level, is supplied by these two G-E 1000-kva power transformers, which step down voltage of power purchased by Dan River Mills.



POWER-SYSTEM FLEXIBILITY is made possible by this G-E 5000-kva frequency changer installed previously. It can convert purchased 60-cycle current to 25 cycles, or plant-generated 25-cycle current to 60 cycles.



POWER-SYSTEM CONTROL is function of main G-E switchgear panel, through which all power is distributed. Plant generates 10,000 kw of 25-cycle current, purchases about 100,000,000 kwh of 60-cycle current per year.

Mills Electric system

A new $7,000,000 addition to the finishing mill providing a total finishing capacity of 1,000,000 yards per day was recently added by Dan River Mills to its Schoolfield Division in Danville, Virginia.

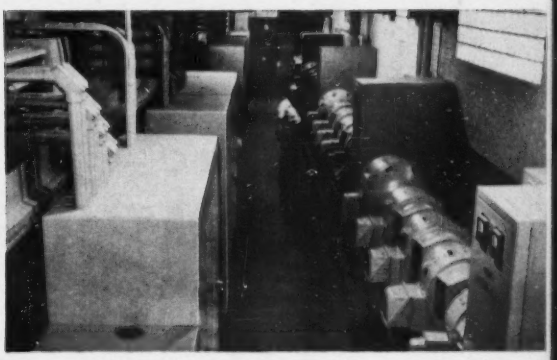
Because this increased load required an expanded electrical system, General Electric application engineers were called in to work with the plant's designers, United Engineers and Constructors. Together, they selected and co-ordinated the electric equipment needed to meet the plant's requirements. This included a 7500-kva turbine-generator, power distribution facilities, and motors and control. G-E field engineers checked initial operation, helped expedite startup.

Most electric power is purchased by the plant at standard 60-cycle frequency. It also generates its own 25-cycle power for some existing equipment, as a by-product of process steam. By a frequency changer that converts 25- to 60-cycle power or vice versa, maximum flexibility in balancing power needs is obtained.

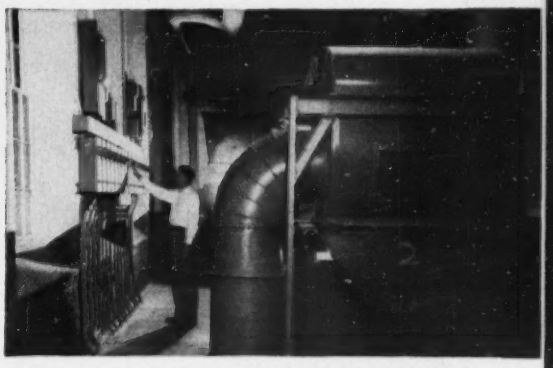
In expanding or modernizing your textile-mill operations, take advantage of the special engineering services available to you through your local G-E Apparatus Sales representative. Call him early in your planning for best results. General Electric Company, Schenectady 5, N. Y. 654-34

Engineered Electrical Systems for Textile Mills

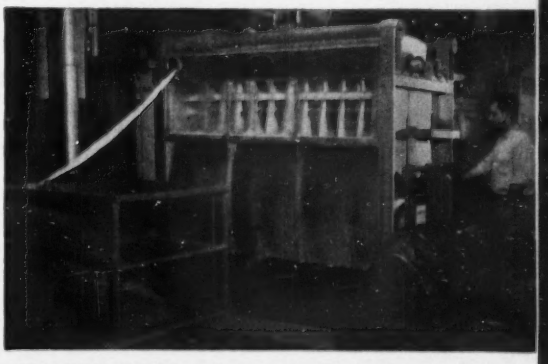
GENERAL ELECTRIC



BLEACHING OPERATION is reliably powered and controlled from this room through G-E motors and starters, multiple-generators, and control panels.



PICKER is controlled from this lineup of G-E combination starters. These space-saving units combine in one enclosure both short-circuit and overload protection.



BLEACHING RANGE uses sturdy G-E d-c motors in adjustable-voltage drives. With continuous bleaching, goods are now bleached in 3 hours instead of 32.

WEAVE ROOM uses G-E loom motors, controlled by G-E loom switches, to help meet rigid speed and torque requirements, help maintain maximum output.

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"Buffalo" Type "BL" Limit-Load Ventilating Fan

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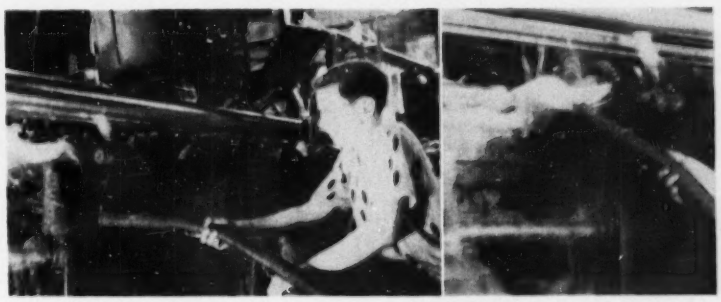
VENTILATING PRESSURE BLOWING AIR CLEANING COOLING AIR TEMPERING HEATING INDUCED DRAFT FORCED DRAFT EXHAUSTING

This Mill Made Its Own Vacuum Cleaner to Remove Lint While Looms Run

EDITOR TEXTILE INDUSTRIES:

We made a handy vacuum cleaner for removing fly from looms, floors, walls, and fixtures. The vacuum cleaner was made from an old oil drum, a motor from a discarded vacuum cleaner, and other odds and ends.

We run a number of spun warps in a set of filament warps, and we cannot blow off looms because the fly would get into the nylon and acetate warps. We made the vacuum cleaner to remove fly from the looms while running. The apparatus is also handy in cleaning fly and lint from fluorescent light fixtures. It also works well on dobby looms.



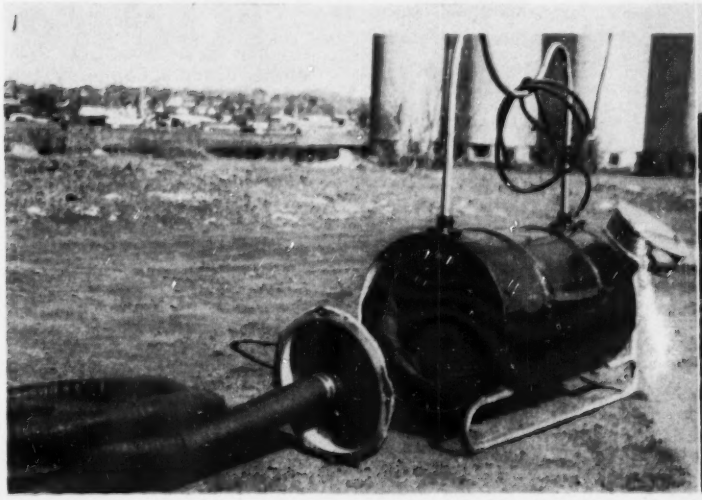
VACUUM MACHINE cleans loom used to make glass fabrics. Manual cleaning of these looms produced a rash on the cleaners' hands.

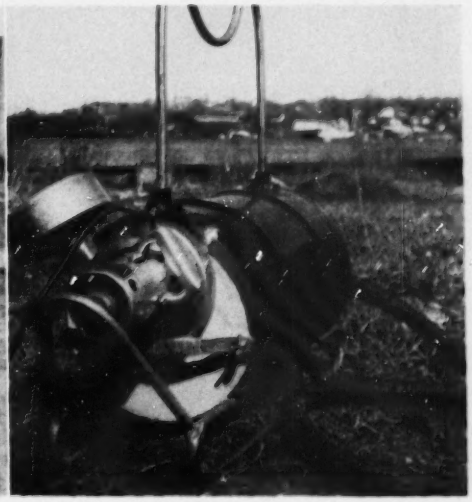
Parts Required:

100-lb grease drum
14 ft of ½" thin-wall conduit
Several ½" bolts and wing nuts
19" of ¾" flat stock ½" thick
15 ft of 1½" heavy duty rubber hose
Two hand wheels from dobby chain barrel on old C&K looms
One one-horsepower motor

LID REMOVED from drum after being drilled for ½" bolts. The four bolts are welded to inside of drum. Then six-inch length of pipe is welded to lid and the 1½-inch hose is placed over the pipe and clamped on. The bag is then cut to fit over four bolts and extend when full to within two inches of end of drum. Also, an air space of about two inches is left around the bag when the bag is fully extended in the drum.

HOLE IS CUT in end of drum to match opening in vacuum cleaner motor. Two more ½" bolts are welded to the drum, and a flat piece of stock is welded to top edge of drum. The flat stock is drilled for a ½" bolt which is welded to drum and comes through hole to accommodate a wing nut.





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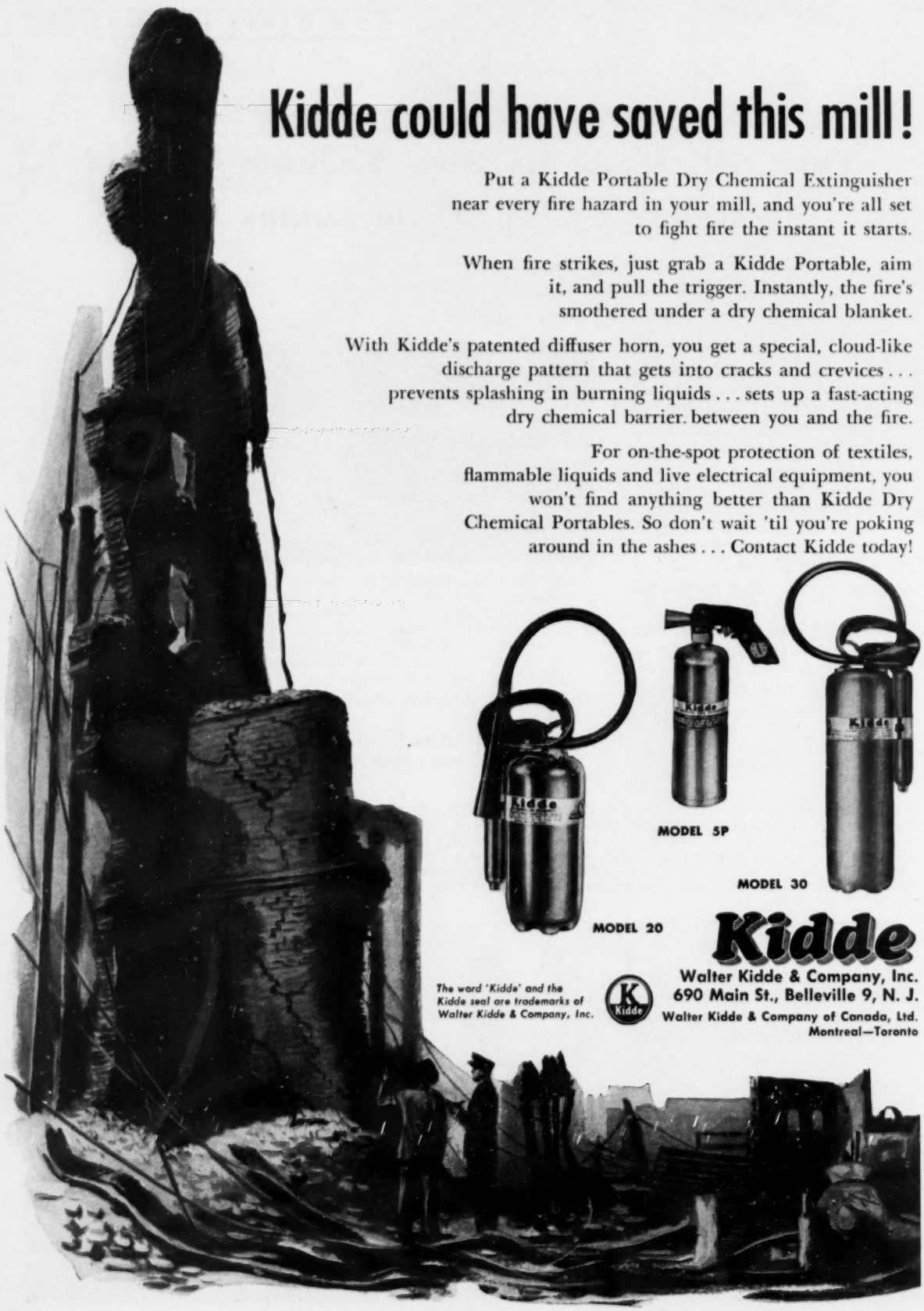
When fire strikes, just grab a Kidde Portable, aim it, and pull the trigger. Instantly, the fire's smothered under a dry chemical blanket.

With Kidde's patented diffuser horn, you get a special, cloud-like discharge pattern that gets into cracks and crevices . . . prevents splashing in burning liquids . . . sets up a fast-acting dry chemical barrier between you and the fire.

For on-the-spot protection of textiles, flammable liquids and live electrical equipment, you won't find anything better than Kidde Dry Chemical Portables. So don't wait 'til you're poking around in the ashes . . . Contact Kidde today!



MODEL 5P

MODEL 30

MODEL 20

Kidde

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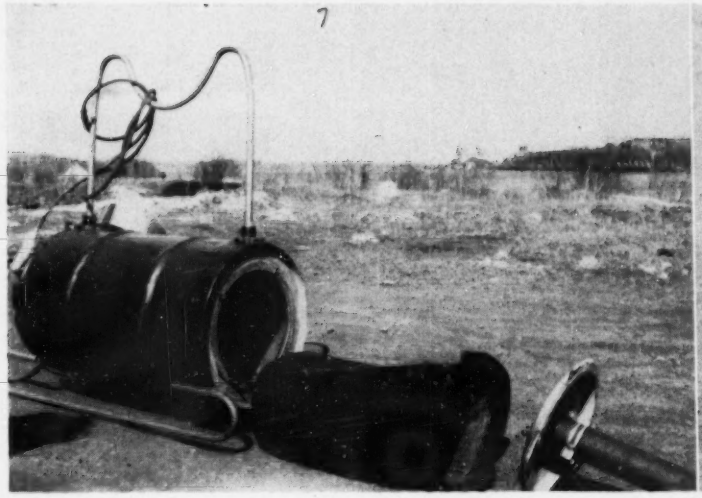


SMALL HAND WHEELS are welded upside down to the drum. After the conduit is bent to shape it is slipped into the hand wheels and fastened in place with set screws to provide a handle. Runners are then shaped and welded on as shown.

U-SHAPED CONDUIT welded to runners provides draw bar and also serves as a prop or rest when bag has to be removed for cleaning. Prop also serves to prevent damage to motor. To use the machine as a blower, hose must be put on exhaust outlet at motor end of drum.

from old bag type vacuum cleaner
One tight canvas bag to fit drum
One hose clamp
One 6″ piece of 1½″ pipe

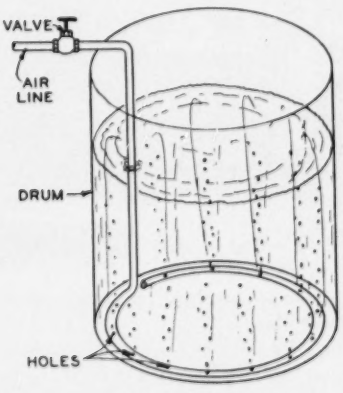
Total cost of the apparatus is only a few dollars, and we wouldn't be without one because it works so well. The accompanying illustrations show details of the assembly.

CONTRIBUTOR No. 8610

How to Keep Solutions Uniform

EDITOR TEXTILE INDUSTRIES:

Since adopting the Dunn System for finishing full-fashioned hosiery, we have discontinued the use of oil wicks and are using a well known brand of trough solution, which is producing excellent results in knitting. When we first started using the trough solution, we found considerable variation in the results accomplished on different heads and on various machines, so we made a thorough investigation as to the causes of such results.



We suspected the trough solution was at fault, so the liquid in each trough was carefully tested. We found considerable amounts of variation in the concentration of the solution which must be mixed with a quantity of water before using. Next we tried removing a few gallons of solution at a time from the mixing vat and tested each sample. The results showed a weak solution when the vat was full, but the solution got progressively stronger as the supply of solution in the vat diminished.

After some consideration, a length of ¼″ copper tubing was procured and bent to fit in the

(Continued on page 187)

Current kink contest closes July 15, 1954. See page 169 for details.

From one source . . . any instrumentation you need

When it comes to measurement and control, every industrial process is different. Each demands its own combination of accuracy, economy, instrument ranges, and all the numerous other characteristics that are peculiar to the individual application.

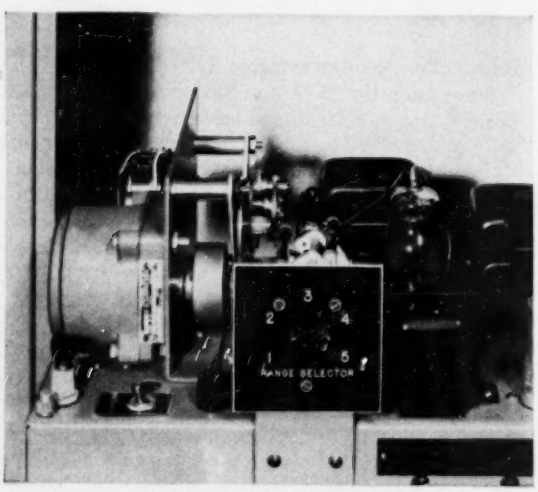
No single instrument and its accessories could possibly fit every process. So Honeywell makes a broad variety of measuring and controlling equipment that spreads across a tremendous range of applications.

The advantages are two-fold. First, you can get all the instrumentation your process requires from a single source, so there is undivided responsibility for the complete installation. And second, you are assured that the equipment selected for your process is recommended without bias . . . neither over-sells nor under-equips . . . needs no stretching, squeezing or compromising to fit it to its assignment.

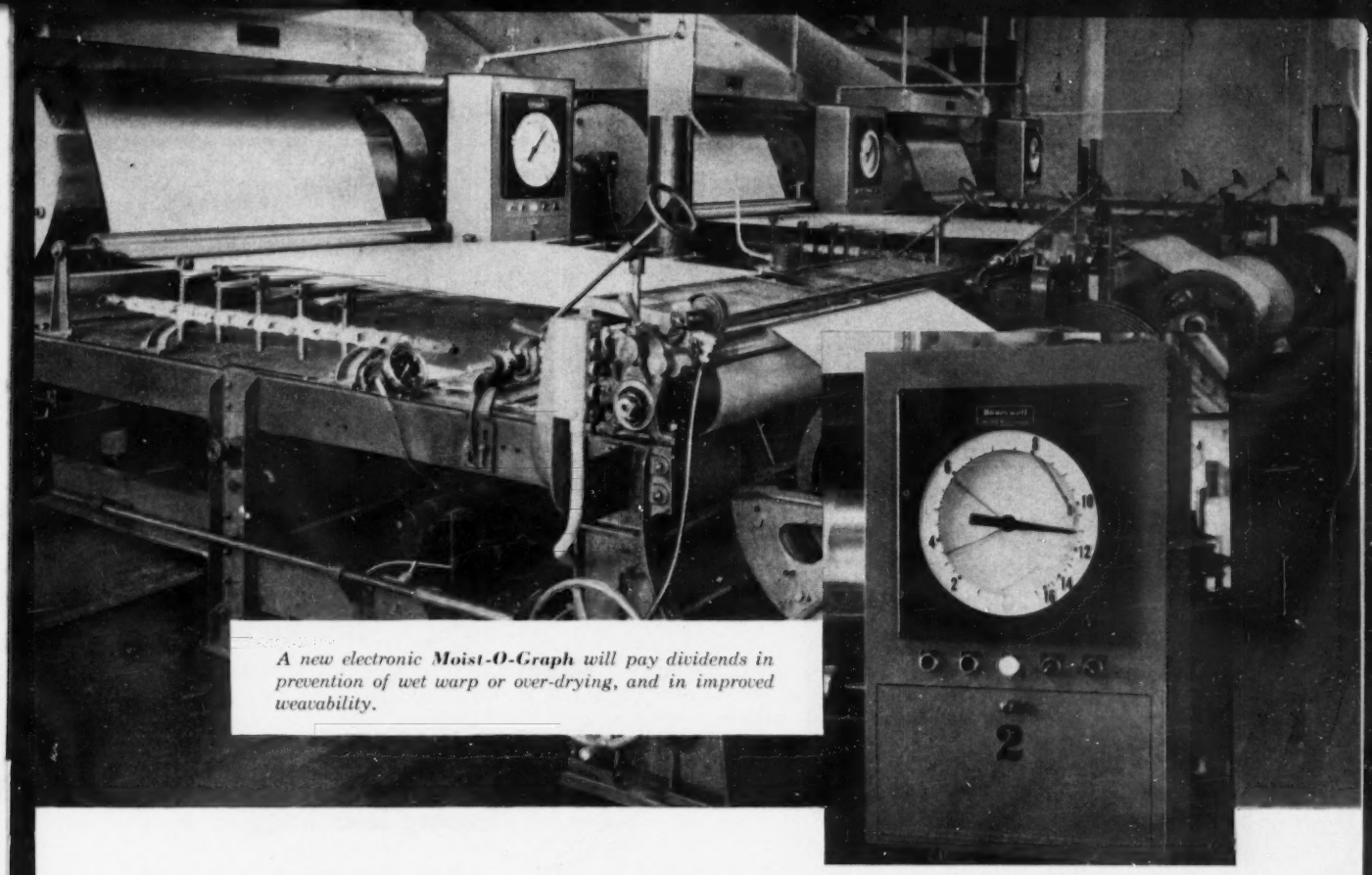
This versatile family includes *ElectroniK* indicators, recorders and controllers in circular and strip chart models, applicable to temperature, pressure, pH, power and dozens of other variables; square root flow meters for control applications; evenly graduated flow meters for cost accounting; thermometers, pressure gauges and liquid level meters; *Pyr-O-Vane* millivoltmeter controllers. Especially useful for graphic panels are the *Tel-O-Set* miniature indicators, recorders and controllers. Electric and pneumatic control systems range from the simplest to the most complex, including automatic program controls and complete systems developed for particular processes.

Working with these instruments is a full choice of primary elements . . . thermocouples, *Radiamatic* radiation elements, pressure-type and electrical resistance thermal systems, flow meter bodies, pH cells and many others. For final control elements, you can choose from a wide range of electric motorized and diaphragm operated valves. To complete the picture, there are more than 7000 non-indicating devices for controlling temperature, pressure, vacuum, liquid level and humidity . . . an unmatched variety of instrumentation made by the world's largest manufacturer of control equipment.

Modernize your slasher for better regain control . . . *with*



Range change switch lets you read per cent regain directly with any fiber, blend or size.



A new electronic ***Moist-O-Graph*** *will pay dividends in prevention of wet warp or over-drying, and in improved weavability.*

the electronic Moist-O-Graph®

ONE of the most profitable modernization investments that you can make in your mill is closer control of warp moisture . . . by means of the electronic *Moist-O-Graph*. The increase in warp uniformity that you can realize will spell substantial boosts in weave room efficiency. And your slasher room production will step up, as this modern moisture-controlling instrumentation opens the path to higher machine speeds and reduced stoppages.

Today's *Moist-O-Graph* offers features that have been developed through more than fifteen years of pioneering experience in warp moisture measurement and control:

Multiple range: a turn of a dial makes the instrument direct reading for any synthetic fiber you may be processing: rayon, orlon, acetate, nylon, dacron.

Electronic measurement: the high precision and speed of modern electronic instrumentation is applied to moisture measurement.

Direct reading: the instrument indicates and records per cent regain for any fiber, blend or size . . . no need for consulting tables.

If you already have an earlier model *Moist-O-Graph*, you can bring your instrumentation up-to-date at a cost of several hundred dollars less than that of a completely new installation. You may be surprised to learn how economically you can take this worthwhile step in modernization. Ask your nearby Honeywell sales engineer to survey your installation . . . he's as near as your phone.

MINNEAPOLIS-HONEYWELL REGULATOR CO., *Industrial Division*, Wayne and Windrim Avenues, Philadelphia 44, Pa.

● **REFERENCE DATA:** Write for new Bulletin No. 54-66, "Automatic Regain Control of Rayon and Synthetic Fiber Slashing."

MINNEAPOLIS **Honeywell**

BROWN INSTRUMENTS

First in Controls

Ideal Goldflyer* Finish Stops . . .

Ideal's smooth-as-glass Goldflyer Finish stops tagging-up at flyer noses, eyes, and slots, and prevents choking-up of hollow legs. This eliminates the slubs, broken ends, and spinning doublings which are ordinarily caused by such tagging-up.

Ideal's exclusive Goldflyer Finish fills all pores and rough spots in the metal. It is baked on and is guaranteed never to flake off or wear to a rough surface.

Ideal Goldflyer Finish can be applied to new flyers or as a part of Ideal's matchless Flyer Repair Service. Send us a half-dozen of your flyers for a test in your mill (at no obligation to you), or specify it on your next repair or reconditioning order.

Here's the Full Ideal Repair Service!

1. Straightening noses
2. Gauging slots
3. Blocking flyers and pressers
4. Rebuilding worn parts of flyers to factory specifications
5. Replacing broken flyer barrels
6. Heat tempering flyers to give extra rigidity
7. Selecto-Speed** balancing for your operating speed
8. Plus super-smooth Goldflyer finish. RCK (Black) or Bright finishes optional

Write, call, or wire for full information.

**Patented
*Trade Name

Ideal Machine Shops, Inc.

Bessemer City, N. C.

30th Year of Continuous Service to Textile Mills

form of a circle in the bottom of a steel drum; a number 60 drill bit was used to drill holes about six inches apart around the circle of copper tubing. A small metering valve was installed in the copper tube above the drum (see accompanying illustration). The line was then connected to a compressed air supply tank. After the drum was filled with proper mixture of trough solution and water, the valve was set to let a small amount of air through the line.

The trough solution is kept in a constant state of agitation by the mixing action of the compressed air, and we have not experienced any more trouble with the trough solution. This idea can be adapted to other liquids, provided there is no danger of increasing the bacterial content.

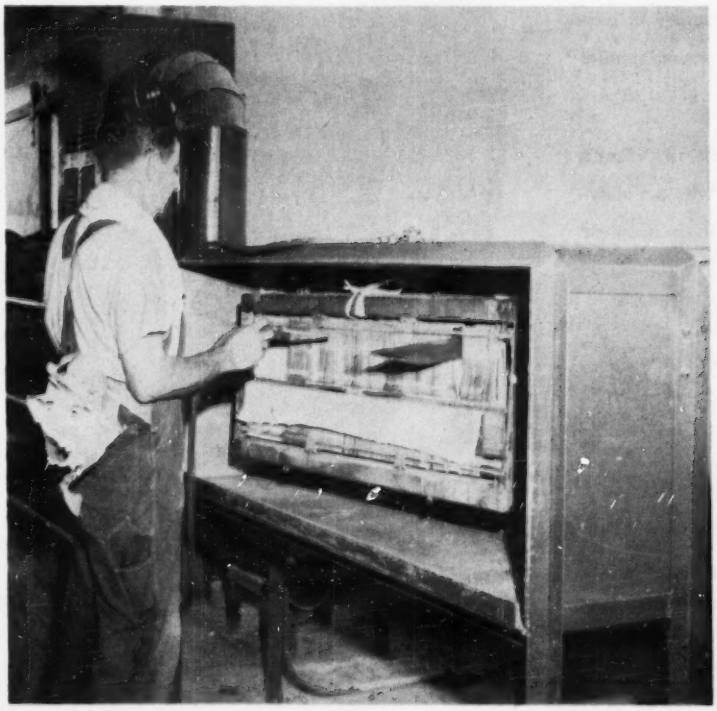
CONTRIBUTOR NO. 8670

Effective Harness Cleaner Made from Spare Parts

A Saco-Lowell air filter, several pieces of sheet metal, and a few other spare parts and material were made into an effective, efficient, and helpful harness cleaner. The apparatus pulls lint and other deposits blown from the harnesses into an air filter. An air hose is used to blow off the harnesses (see accompanying illustration) which are suspended on steel hangers provided for the purpose.

A rectangular shaped sheet metal cabinet was made to provide an enclosure for the harnesses while they are blown off, and the cabinet also serves as a collector for the refuse blown from the dirty harnesses and heddles. A vacuum line extends from the cabinet to the air filter. The air filter is emptied once each shift.

This equipment is popular among the operatives in that it saves a lot of time otherwise devoted to the tedious task of cleaning harnesses and heddles.

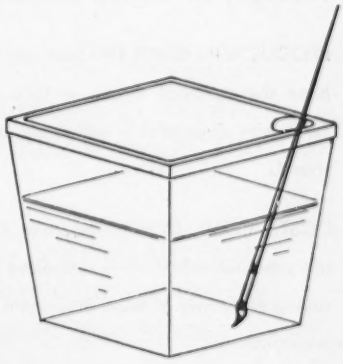


Use Refrigerator Dish for Quill-Tinting Solution

EDITOR TEXTILE INDUSTRIES:

Formerly, we tinted our quills by filling a large open bottle with dye solution and sitting it on the quilling machine where the operators could have easy access.

If the solution were not used regularly, or if it were left over the weekend, contact with air and moisture produced a change in



color. Sometimes a yellow color appeared to be orange, and a light green tint sometimes changed to appear blue. Battery operatives were confused as to what was yellow and what was orange.

We purchased some small plastic dishes, like those used by housewives to store leftovers in the refrigerators, and put a small hole in the cover for a brush. Now the dye is protected from the atmosphere and does not change shade so much. We use a smaller brush and do not waste so much dye.

CONTRIBUTOR NO. 8685

Ideal Goldflyer* Finish Stops . . .

Tagging In Noses

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PA

MIS

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2. Gauging slots
3. Blocking flyers and pressers
4. Rebuilding worn parts of flyers to factory specifications
5. Replacing broken flyer barrels
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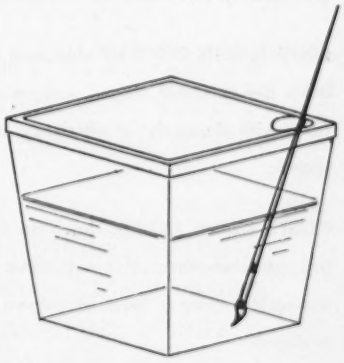

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Tagging In Noses

Tagging In Eyes

Tagging In Slots

Slubs

Broken End

Roving Doublings

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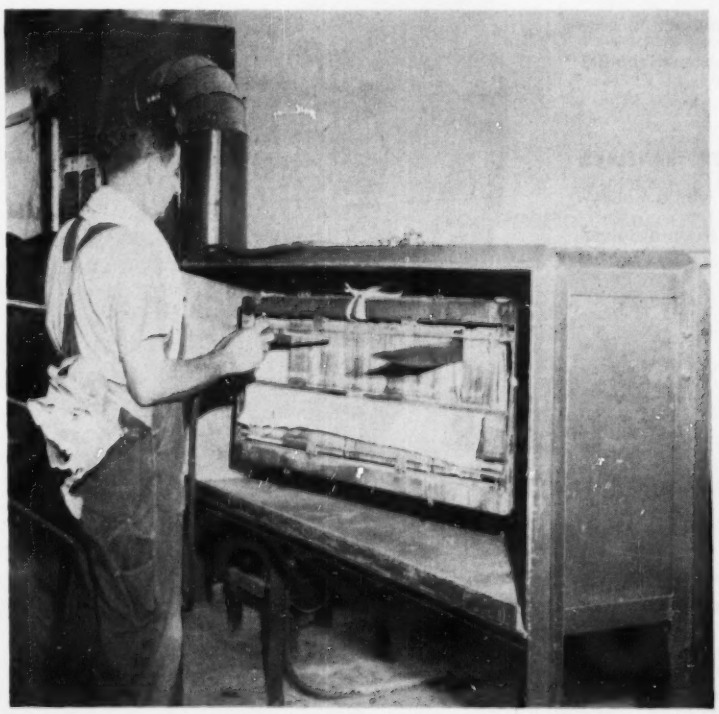

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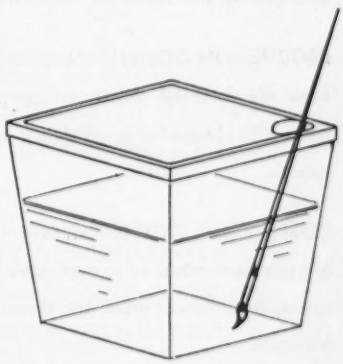

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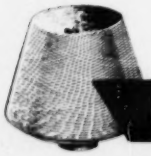
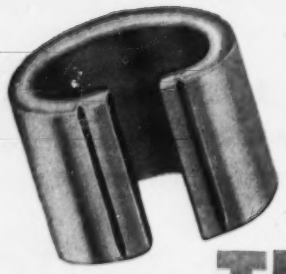


BETTER YARNS

.....AT FASTER SPEEDS

.....AT LOWER COSTS



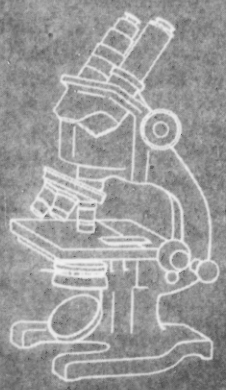
with

CARTER TRAVELERS

QUALITY GOES UP—because CARTER TRAVELERS are scientifically designed and manufactured to meet specific quality standards for individual yarns.

PRODUCTION GOES UP—because CARTER TRAVELERS have the essential shape, surface and temper to perform with dependable efficiency at maximum spindle speeds.

COSTS COME DOWN—because CARTER TRAVELERS are precision-matched to expensive rings with a money-saving reduction of wear and down time to an absolute minimum.



QUALITY CONTROL

The absolute uniformity of weight, temper and shape—the always high quality—of CARTER TRAVELERS is carefully controlled throughout every manufacturing process by the facilities and personnel of a large, modern metallurgical laboratory.

CARTER TRAVELER COMPANY

Division of A. B. CARTER, INC., GASTONIA, N. C.

Manufacturers of The Boyce Weavers Knotter

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W. L. Rankin.....501 S. Chester St., Gastonia, N. C.
D. E. Phillips.....406 LeGrand Blvd., Greenville, S. C.
P. L. Piercy.....128 Hudson St., Spartanburg, S. C.
J. R. Richie.....3014 Lewis Farm Road, Raleigh, N. C.
J. W. Brown.....P. O. Box No. 560, LaGrange, Ga.
J. K. Davis.....P. O. Box No. 129, Auburn, Ala.
C. E. Herrick.....44 Franklin St., Providence, R. I.
Hugh Williams & Co.....47 Colborne St., Toronto 1, Canada

SUPPLIERS News

WHAT THEY ARE DOING

Abbot Worsted Co. has appointed **Edward H. Largen & Co.**, Charlotte, N. C., sole selling representative, except for upholstery yarns, for the southern area.

Allis-Chalmers Manufacturing Co. has announced that a new series of 35mm sound slide films for industry is now available through its general machinery division district offices. They are on the subject of V-belt drives, and each runs about 20 minutes.

Howard M. Fitch was recently elected a vice-president of **American Air Filter Co., Inc.** He is general manager of the Herman Nelson division at Moline, Ill.

A new sales service laboratory has been opened in Teterboro, N. J., by **Arnold Hoffman & Co., Inc.**

Dixon C. Van Winkle has succeeded L. G. Parkinson, resigned, as manager of **Atlas Powder Co.'s** chemical department's New York district sales office.

Bentley Engineering Co., Ltd., London, England, has purchased control of **Mellor Bromley & Co., Ltd.**

William R. Muller was recently elected a vice-president of **The Bullard Clark Co.** He is in charge of all textile sales of the E. H. Jacobs Northern Division in Danielson, Conn., and E. H. Jacobs Southern Division, Charlotte, N. C.

The **Carborundum Co.** has announced the selection of F. Jerome Tone, Jr., as senior vice-president, and Frederick T. Keeler as director of sales.

Charles A. Lasky has retired after 25 years of service with the **Celanese Corp. of America.** He has been chief fabric technician and designer, and is one of the leading authorities on the construction and design of acetate fabrics.

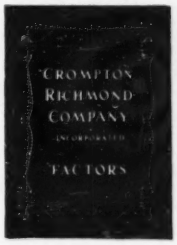
Arnold G. Tew has joined the sales staff of **Carbic-Moss Corporation,** and will have as his territory southern and western New England. Mr. Tew was previously with the Ciba Co.

Lawrence A. Combs, director of industrial relations, has been made a vice-president of **Container Corp. of America.**

Corona Manufacturing Corp. has acquired exclusive license for Merco Industries' Merco Infra "Pyrex" tube heater in the industrial oven field, and plans are under way for Corona to expand its sales efforts to cover the United States and its possessions. Horace H. Wagner is director of sales for the company.

Raymond F. Evans has been elected chairman of the board and John A. Sargent, president, of the **Diamond Alkali Co.**

Clark Equipment Co. has begun construction of a manufacturing plant on the outskirts of Benton Harbor, Mich., on a 100-acre tract of land. The building will have 145,000 sq ft floor



The Human Factor

Experience In The South

Factoring for the South requires a specialized knowledge of the South regarding its manufacturing and distribution problems.

Crompton Factoring has that knowledge—acquired after many decades of experience in producing and factoring in the South.

Thus, we not only supply immediate cash for receivables, but wise counsel—when asked for—on the many problems a Southern business man is confronted with.

Crompton Factoring also means that we assume all credit risks and collection chores—a gratifying relief to a busy Southerner.

Representative: VON D. OEHMIG, Green Island Hills, Columbus, Ga.

CROMPTON-RICHMOND CO., INC.

1071 Avenue of the Americas, New York 18, N. Y.

Now! Your Mill Can Modernize and Conserve Cash, Too

By the Leesona Pay-As-You-Profit Program, Cost-Cutting Winding and Twisting Machinery Can be Yours at Once:

either *bought* . . . on the Leesona LONG TERM PURCHASE PLAN
or *rented* . . . on the Leesona LONG TERM LEASE PLAN

To Universal's constant engineering development (which you well know), we add advanced business thinking to help mills fill the need for new equipment to meet today's intense competition.

These Long-Term Purchase and Lease Plans are being presented to mill management and financial men. But everyone throughout a mill's organization will be interested to know that the latest winding and twisting equipment now can be easily obtained and put into operation. So that the important advantages of increased production and lowered operating-maintenance cost can be immediately enjoyed — while management is freed from heavy financial burden.

Write for explanatory bulletin if you wish more details. And remember these Plans when you feel any Universal machines might improve your operation.

Any Open-Wind Package — Perfectly Wound at Low Cost by the Roto-Coner®

New Features Step Up Performance, Save Time

Since the Roto-Coner was introduced, its now-famous Rotary Traverse has made history by insuring top quality yarn and uniform open-wind packages in the best form for later use.

Performing two functions — that of driving drum and traverse guide, it has eliminated the many moving parts of reciprocating guide machines. Thus, wear is reduced, and vibrationless operation results in better package production.

A choice of four groove patterns gives the correct angle of wind for the different package shapes shown here — so each package on a machine is produced under uniform winding conditions.

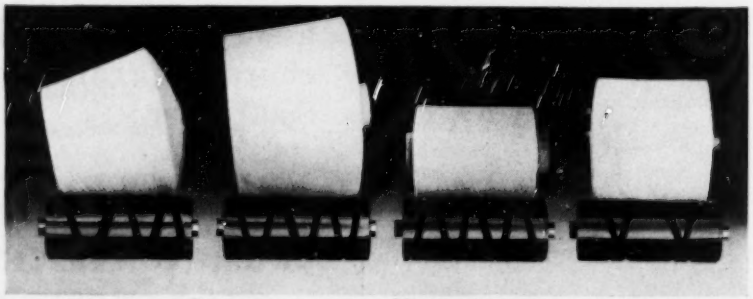
The Roto-Coner can be equipped to wind cotton, spun synthetics, wool, worsted, linen, and various blends.

These yarns can be wound on to:

- *Paper Cones and Tubes for Sales Yarn*
- *Wood Cones or Tubes for Twisting*
- *Wood Cones for Warping Creels*
- *Paper Cones for Knitting* — the famous Roto-Cone. Here the Roto-Coner assures cones of clean yarn with improved finish and perfect lay — ideal for knitting cones. Proper increasing taper and minimum number of winds mean free delivery to the knitting machine.
- *Perforated Tubes or Cones and Springs for Dyeing*. You get superior dyeing packages of uniform density because:
  1. Pressure is not added as package weight increases
  2. Hard ends are eliminated by action of Rotary Traverse grooves.

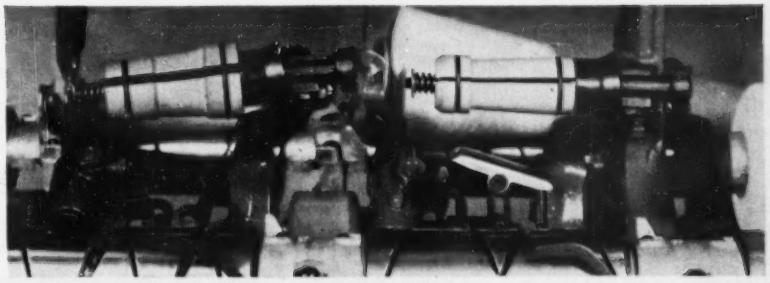
New, Quick-Doffing Arbors Cut Dye Package Handling Time

Self-contained, self-releasing, expandable arbors simplify winding dye pack-

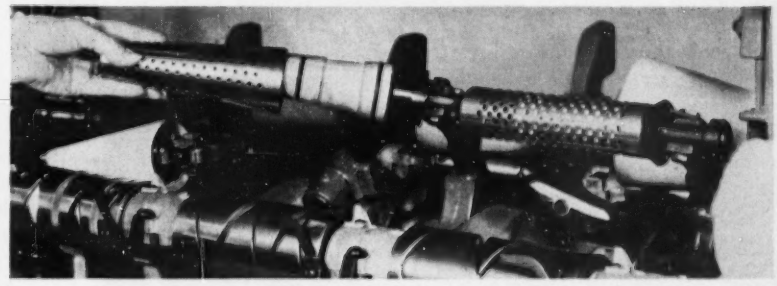


Groove arrangements of Rotary Traverse.

ages on metal cones, or dye tubes onto 1⅝" fiber, metal or wire mesh carriers. There are no arbor parts to remove. The operator merely swings out the arbor, which contracts so that the finished package slips off easily. Arbors run on live ball-bearing spindles which require lubrication only once a year.



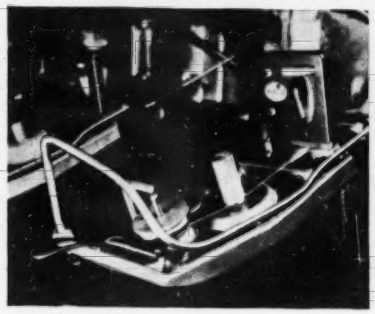
After Doffing, The Roto-Coner's new quick-doffing dye cone and dye tube arbor attachments are here shown on Universal ball bearing spindles.



During Donning, the dye cone is easily slipped onto the swung-out contracted arbor at left. At right, a dye tube is shown in position held firmly by its expanded arbor.

Micro-Set Slub Catcher Now Improves Yarn Quality

The new Micro-Set Slub Catcher (optional equipment), by its greater sensitivity, allows close slubbing with a



wider opening. A thin, sharp, toggle-action blade swings against the anvil, effectively arresting the slub.

Designed to clear soft, torpedo slubs from long staple synthetic fibers and blends, it will also remove hard slubs, double spinning and piecings. The blade can be set to any opening up to 80 thousandths of an inch — now making it satisfactory for yarns ranging from fine to coarse counts such as coarse worsteds.

UNIRAIL® Uptwister Acceptance Continues to Grow

The outstanding advantages of this machine have brought higher yarn quality and better packages at faster speeds and lower costs to an ever-increasing number of mills during the past two years.

The Unirail with Headless Package Take-Up offers additional benefits, such as:

30% Less Donning and Doffing Time — because of the built-in, expandable headless package arbor.

No Waste from Take-Up Roll or Shaft-Roll Wraps — an Anti-Drum-Wrap device is a part of the arbor.

Better Packages at Lower Cost result from a unique stop motion that has more features than any other uptwister stop motion known.

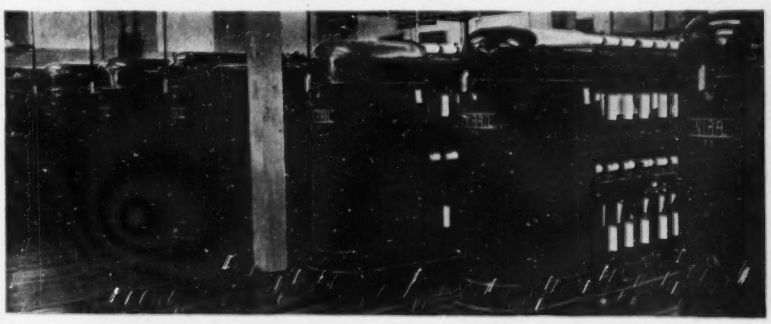
Yarn-Handling Time Cut to Minimum by Automatic Tailing Device and self-threading traverse guide.

Add all these up and you'll see why over 71,500 Unirail Uptwister spindles have been sold since 1952.

UNIRAIL Advantages Apply to DACRON*

The high speed of the Headless Package Unirail allows twist to be inserted in Dacron filament at a rate limited only by the characteristics of the yarn. Initial low twist from Dacron cheeses, to bind filaments, may be inserted on the Universal Model 10 Ring Twister. Further high twist may then be added on the Unirail Uptwister.

*Reg. T. M. for DuPont polyester fiber



UNIVERSAL WINDING COMPANY

P. O. Box 1605, Providence 1, Rhode Island

BOSTON, PHILADELPHIA, UTICA, CHARLOTTE, ATLANTA, LOS ANGELES

MONTREAL, HAMILTON, CANADA; MANCHESTER, ENGLAND; PARIS, FRANCE; BASLE, SWITZERLAND

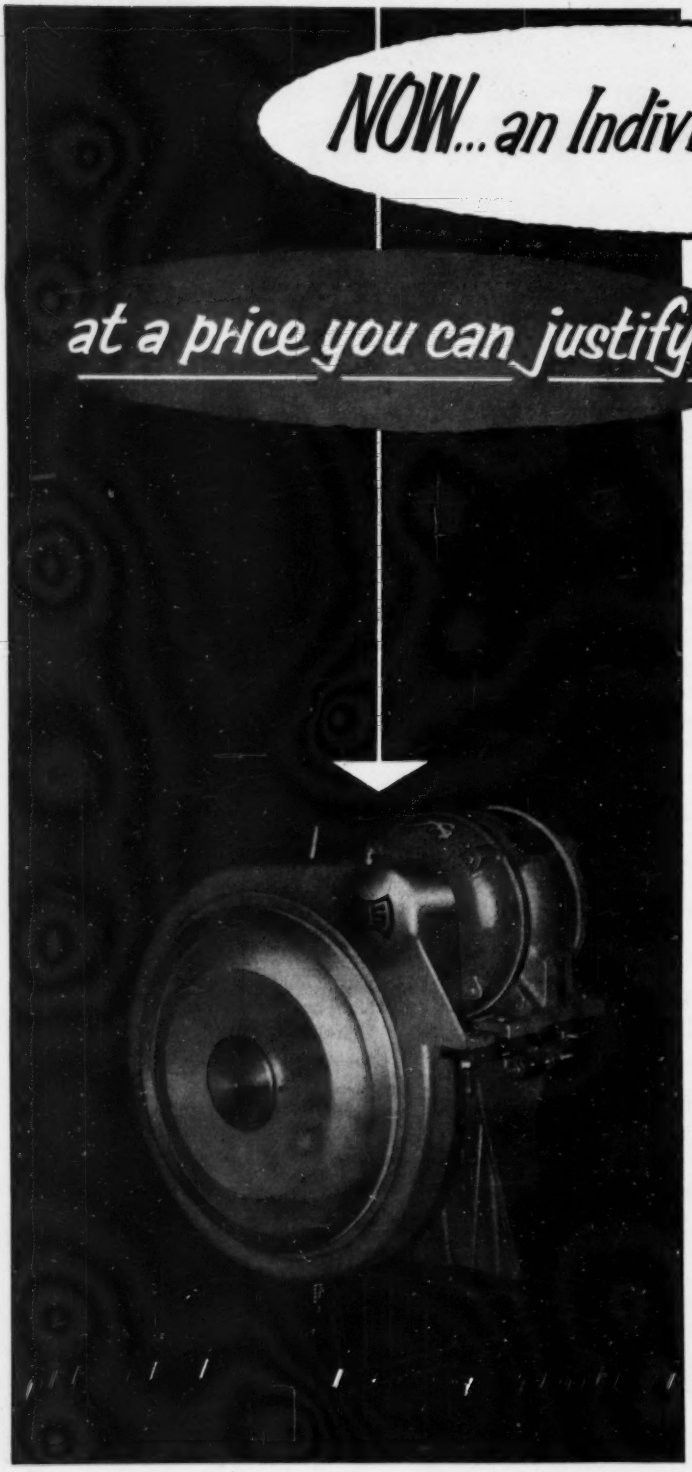
Agents in every principal textile center throughout the world

Winding and Twisting Machinery for Natural and Synthetic Yarns

23.3.18

NOW... an Individual Card Drive

at a price you can justify



Here is a new individual card drive.
Not only is the first investment for this drive low, but its simple time-tested principle assures little, if any, maintenance cost.

THIS DRIVE MAINTAINS STANDARD CARD OPERATING PROCEDURE AND PRESENT METHOD OF STRIPPING, eliminating cost of separate stripping devices and dangers inherent in training personnel in new methods. The operation, in addition to being easier and more quickly executed, is safer than ever before.

MILLS EQUIPPED WITH THIS DRIVE CAN STANDARDIZE CARD PRODUCTION since the slippage associated with any type of belt drive has been eliminated. It embodies the advantages of direct drives plus the slip-clutch safety to prevent possible damage from chokes.

AS A PACKAGED UNIT, this drive is easily and quickly installed. It is fitted with a rigid mounting direct to the card frame with no complicated reduction unit or overhung load on the cylinder shaft. Occupying approximately the same space as existing flat belt drives, this drive leaves the flats clear and eliminates the danger of springing arches or damage to flats due to vibration.

Now you can reduce the production loss of group shut-downs and eliminate the accidents and costly maintenance associated with belts and line shafts.

If you haven't seen this drive, contact your nearest Southern States representative or write today for Bulletin No. 200.

All the parts necessary for continuous stripper drive can be supplied at moderate extra cost.

Southern States Equipment Corp.
HAMPTON GEORGIA

space, and to facilitate handling of heavy equipment, craneways will be provided to cover approximately 75% of the total floor area.

T. K. McKamy has been appointed district manager of **Century Electric Co.'s** new branch office at 634 S. Cedar

Mr. McKamy

St., Charlotte, N. C. He has been with the company since 1946 as application engineer with the Atlanta office.

Wrenn Brothers of Charlotte, N. C., are now distributing **Colson Co.'s** products in Florida, and have opened a sales and stock office in Jacksonville. Distribution in Alabama has been awarded to **Wurzburg Brothers** of Memphis, Tenn., with headquarters in Birmingham.

Carl Baker is now sales manager, industrial supply division, of the **W. D. Dodenhoff Co.** He was previously with the Sullivan Hardware Co., Anderson, S. C.

Dow Corning Corp. has appointed Norton C. Foster manager of textile industry sales. He was previously manager of the firm's Washington, D. C., office, and is succeeded there by Gordon E. McIntyre.

T. Nash Broaddus has been made assistant manager of the fabric development group of **E. I. du Pont de Nemours and Co., Inc.'s** textile fibers department. He was previously area superintendent at the firm's nylon plant at Martinsville, Va.

David M. Spillane has been made Chicago district manager of **Graver Water Conditioning Co.** He was previously New York sales engineer.

O. S. Leslie, vice-president in charge of manufacturing, was recently elected to the board of directors of **Fairbanks, Morse & Co.** J. A. Cuneo was made vice-president in charge of sales; and Robert B. Craig, formerly assistant to the president, was elected a vice-president with headquarters in Washington, D. C. New general manager of Fairbanks, Morse de Mexico S. A. and Manufacturers Fairbanks, Morse S. A. is Mario A. Gasque. He has been with the firm in Mexico since 1946, and succeeds Paul A. Suess, now manager of the Los Angeles branch.

M. W. Evans, formerly with North Star Woolen Co., is now with **The Felters Co.** in charge of product development sales. Parker N. Wheeler is now in charge of market development work at the firm's Jackson, Mich., plant. Succeeding him as manager of the Unisorb division in Boston is James W. Morrison.

SUPPLIERS News — WHAT THEY ARE DOING

A new organization, the **Fiber Research Corp.**, was recently formed to

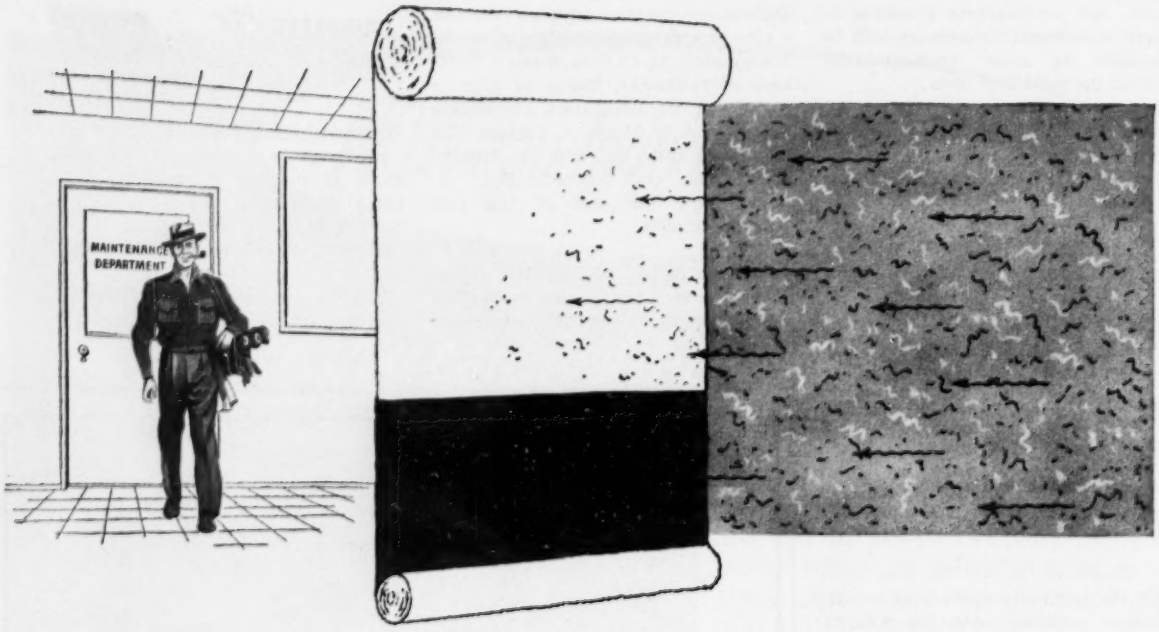
TRUITT-STYLE METAL ROVING & FILLING TRUCKS

Now manufactured exclusively by Fisher, the Truitt-Style metal Roving and Filling Trucks are made in a variety of sizes and specifications to suit mills' needs. We make trucks for all mill purposes. We offer engineering service to solve materials-handling problems.

Representatives

Carolina Supply Co., 35 W. Court St., Greenville, S. C.
Textile Specialty Co., Box 1297, Greensboro, N. C.
J. W. Davis, 122 Dillingham St., Columbus, Ga.
Thos. A. Davis, 412 Swift Bldg., Columbus, Ga.

FISHER MANUFACTURING CO.
MATERIALS HANDLING EQUIPMENT. TEXTILE
BOX 244 -- HARTWELL, GEORGIA



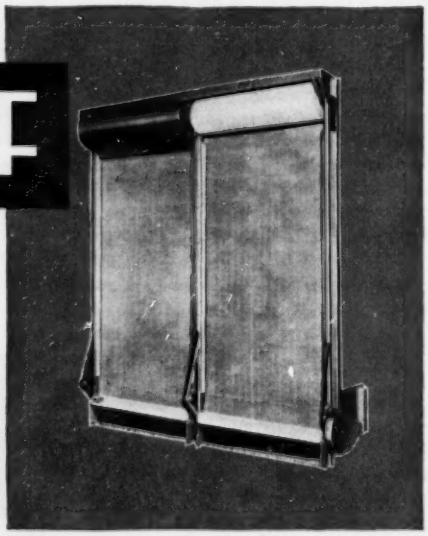
No More Lint... NO MORE OVERTIME MAINTENANCE

AUTO-AIRMAT—the "lint hungry" automatic air filter that will work 24 hours *every* day banishing lint from the recirculated air in ventilating systems. This is one of the famous family of AAF filters—and was especially designed for the job. It is the only automatic self-cleaning lint filter on the market. It soon pays for itself by beating costly week-end maintenance on lint-clogged humidifiers, washers and precipitators. The self-cleaning AUTO-AIRMAT rolls up collected lint automatically, ready for easy disposal. We invite inquiries. Please write for Experience Reports.

Expect the Best from...

AAF

American Air Filter
COMPANY, INC.
275 Central Avenue, Louisville 8, Ky.
American Air Filter of Canada, Ltd., Montreal, P. Q.



This is a photograph of the AUTO-AIRMAT . . . the only self-cleaning lint filter developed especially for textile mill service. The AUTO-AIRMAT can be installed in Double V banks to conserve space. Manual maintenance is reduced to a minimum. Here, in one complete unit, is the best answer to costly overtime maintenance that reduces profits in textile mill operation.

undertake the commercial development of certain research activities of National Research Corp., Cambridge, Mass. Willard Bridges of Walker Top Associates, which supplied the initial capital for Fiber Research, is president of the new company.

Electric Furnace Corp. has reorganized its Charlotte, N. C., branch into the **Livingstone Coating Corp.**, with J. S. Livingstone, vice-president, as president and treasurer of the new firm. The Charlotte branch, while increasing its application of Du Pont's Teflon in the South, has adopted new plastic coatings said to be corrosion resistant and durable.

Previously with the Pennsylvania Salt Manufacturing Co. of Washington, Hubert A. Des Marais is now manager of the industrial chemicals division of **Geigy Chemical Corp.**

Hobbs Manufacturing Co., Worcester, Mass., has opened a sales office

Mr. Clay

at 132 Nassau St., New York City. Sales and services in this office are under the direction of George B. Clay.

A $6,000,000 high pressure acetylene plant in Calvert City, Ky., has been planned by the **General Aniline & Film Corp.** It is expected to be in operation by the end of next year, and will incorporate many features of the firm's pilot plant at Linden, N. J. The plant will concentrate initially on the production of the PVP family of acetylene derivatives, which are used in a variety of textile applications involving sizing and stripping and binding of dyestuffs.

Dr. James E. Boyd, physicist, has been appointed assistant director for research at the engineering experiment station of the **Georgia Institute of Technology.** This post has been vacant since the resignation of Dr. Fred W. Cox last November.

B. F. Goodrich Chemical Co. has named Roger C. Bascom field sales manager and Fred L. McNabb, technical service manager, of the Hycar and rubber chemicals department. Mr. Bascom has been with the firm since 1943, Mr. McNabb since 1935.

Industrial Equipment Co., Charlotte, N. C., has been appointed sales representative for **Holyoke Machine Co.'s** textile calender and embossing rolls in Alabama, Georgia, Kentucky, Mississippi, North and South Carolina, Tennessee, Virginia, and West Virginia. Alexander F. Schenck is in charge of sales.

Hooker Electrochemical Co. has promoted Harris C. Miller from sales representative to assistant district sales manager of the firm's New York district sales office. Dr. Frank W.

SUPPLIERS News
WHAT THEY ARE DOING

TEXTILE ENGINEERS

here's how a *Speedline* system will cut your piping costs

on pressure problems

If You Use Schedule 40 Pipe at 150 psi Operating Pressure

Schedule 40: 100 to 1 Safety Factor

Lighter Wall will Meet Pressure Safety Requirements

Schedule 10: 83 to 1 Safety Factor

Schedule 5: 50 to 1 Safety Factor

BUY ALL THE WALL YOU *NEED*... DON'T BUY *MORE*

on flow problems

If You Use Screwed Fittings

EFFECTIVE WALL AFTER THREADING

YOU BUY THIS. YOU GET THIS

You Lose One Half The Wall You Bought—AT THE THREADS

Lighter Wall Plus Speedline Fittings Give You:

GREATER INSIDE AREA-MORE FLOW
LOWER PRESSURE DROP

You get *greater flow and capacity* in light-wall pipe. For example, Schedule 5 has 15% to 25% more capacity than Schedule 40.

on corrosion problems

CORRECT ANALYSIS will combat CORROSION regardless of Wall Thickness

Type Corrosion	More Wall?
Contamination	No advantage
Discoloration	No advantage
Intergranular	No advantage
Galvanic	No advantage
Atmospheric	May be advantage
Pitting	Little advantage
Inches Penetration Year	May be advantage

CHANGED ANALYSIS and LESS WALL can be GREATER COST ADVANTAGE than CHANGED ANALYSIS and SAME WALL.

Speedline FITTINGS DESIGNED FOR SCHEDULES 5 AND 10 GIVE YOU:

lower installation costs

for labor

HOLDS PIPE ENDS CLOSE TOGETHER

SPEEDLINE ALIGNING CONNECTORS
Speed Installation
*Can be Welded, Fused, Soldered or Brazed
Provide Easy Change-over from Schedule 40 to 5 or 10

for materials

SCHED. 5
SCHED. 10
SCHED. 40

You pay much less for light wall pipe. Here's a cost comparison of the three schedules in 1" size.

exclusive tangential feature

Speedline CONVENTIONAL

Provides Easier Aligning (with or without aligning connectors), more clearance for Welding or Flanging on ALL Speedline Formed Fittings. See gray panel below.

greater flexibility

Type of Joint can be selected "on the job."

UNION BUTT WELD FLANGED ALIGNING CONNECTOR

FEWER DESIGN HOURS
FEWER INVENTORY ITEMS

SPEEDLINE "Multiple Choice" Fittings eliminate conventional flanged fittings, provide time and cost advantages of simple layouts versus elaborate and costly designs.

J. M. TULL METAL & SUPPLY CO., INC.
285 MARIETTA STREET N. W. • ATLANTA 3, GEORGIA

Write for a copy of "Speedline Fittings"...without obligation.

Speedline *Corrosion-Resistant FITTINGS—the newest thing in pipeline economy*

Manufactured by **HORACE T. POTTS CO.** 522 E. Erie Avenue • Philadelphia 34, Penna.

Want improved sizing, finishing printing?

The OK BRAND name is your assurance of

- ✱ *Highest quality*
- ✱ *Perfect uniformity*
- ✱ *Absolute dependability*
- ✱ *Better values*
- ✱ *Exceptional services*

then use...

TEXTILE STARCHES

Technical Service Available!

Whatever your textile starch problems may be, we'd like to tackle 'em. You are invited to consult with Hubinger's expert technicians—without cost or obligation.

top textile men choose OK BRAND

...the Stamp of Quality!

THE HUBINGER COMPANY, KEOKUK, IOWA

Established in 1881

Branch offices: New York • Chicago • Los Angeles • Boston • Charlotte

Long has been transferred from the research and development department to the sales development group of the sales department.

The **Goodyear Tire & Rubber Co.** has announced the following personnel changes in its chemical division: R. E. Workman, assistant to the general manager; C. O. McNeer, general sales manager; and M. J. Rhoad, assistant to the general sales manager.

Clarence O. Smith, previously with Atkinson, Haserick & Co., has joined the sales staff of the **Cecil H. Jarrett Co., Inc.,** and will contact textile mills in North Carolina and Virginia.

George M. Walker has been made vice-president and general manager of **Koppers Co., Inc.'s** chemical division. He succeeds Dan M. Rugg, who died unexpectedly in March.

James J. Secor, Jr.,'s territory has been extended to cover the sales of **Libbey-Owens-Ford** fiber glass insulation and yarns in the Philadelphia trade area. He has been working out of the New York office since 1953, and fills the vacancy in Philadelphia caused by the resignation of C. F. Moore.

Walter P. Murray, with the firm since 1949, has been made sales manager of **Mount Hope Machinery Co.** His headquarters are in the firm's office at Taunton, Mass.

Robert M. Leach, formerly a representative for the National Ring

Mr. Leach

Traveler Co., has joined **Herr Manufacturing Co.** as representative for New England and eastern Canada.

The **Lunkenheimer Co.** has announced the appointment of Melvin W. Pauly as general manager of sales, and Harold H. Layritz as his assistant. Mr. Pauly joined the firm in 1950 as New York manager. Mr. Layritz was previously sales manager of the central division.

Henry Papini has been made executive vice-president of **Metro-Atlantic, Inc.** His headquarters remain in Greenville, S. C. The firm has also announced plans for construction of a manufacturing plant in the South, and for expansion of the main plant in Centredale, R. I.

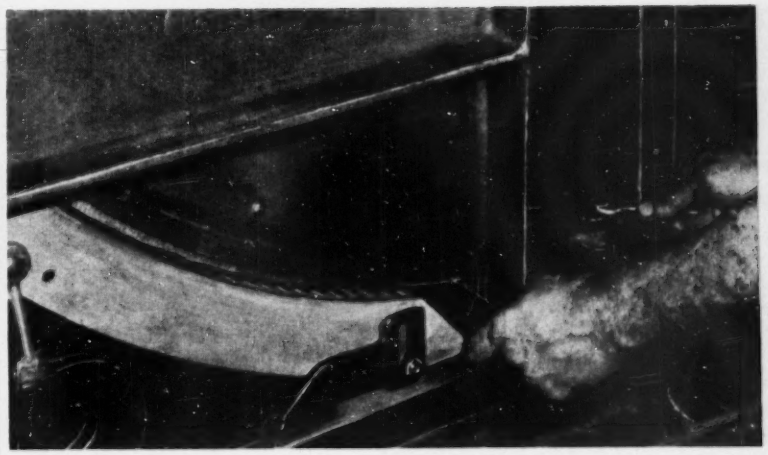
The **Transparent Wrap Machine Corp.,** Hasbrouck Heights, N. J., has been purchased by the **Package Machinery Co.** of East Longmeadow, Mass. This is the fourth company to be bought by Package Machinery in

SUPPLIERS News
WHAT THEY ARE DOING

the past few years. Among the executive and technical personnel of Transparent who will join the firm are Walter Zwoyer, president; Albert Gausman, plant superintendent; Henry Knochel, sales manager; and William Thompson, chief engineer.

The **Pennsylvania Salt Manufac-**

SET UP FOR SAVINGS



with the closer tolerance of JENKINS screens. Set them up closer under the card cylinder . . . . and give Jenkins Screens a chance to save you *more* money. Jenkins builds them to set close . . . . to take out more motes and trash, eliminate good cotton loss.

Jenkins engineered uniformity assures the right fit . . . . . a "perfect circle" under the card cylinder.

Installation too, is quicker, easier, more economical . . . . to make your Savings Set-Up complete.

JENKINS METAL SHOPS, INC.
GASTONIA, NORTH CAROLINA

40 YEARS CONTINUOUS SERVICE TO THE TEXTILE INDUSTRY

turing Co. has established two new operating divisions—the industrial chemicals, to be headed by William P. Drake, vice-president in charge of sales; and the chemical specialties, under the direction of Albert H. Clem, general sales manager.

Horace T. Potts Co., Philadelphia, Pa., steel warehousing firm, formerly a partnership, has become incorporated, with Horace T. Potts II being named president of the corporation.

Joachim Koegler, member of Reiner-Famatex, Inc., affiliate of

Mr. Koegler

Robert Reiner, Inc., has decided to remain in this country permanently as a representative of his firm.

J. A. Dickson has been made district manager of the southeastern states for **The Stanley Works.** He was

Mr. Dickson

formerly district sales manager in this area, and will continue to make his headquarters in the Atlanta, Ga., district offices.

The **Standard Pressed Steel Co.** has promoted Edwin Y. Bready from director of purchases to division manager of the Hollowell pressed steel division. Frederick D. Fernsler, previously manager of production control, is now manager of the Unbrako-Flexloc division.

Reliance Electric & Engineering Co. has added to its sales offices the following application engineers: Arthur J. Stockslager, Atlanta; Walter A. Thorne, Houston; R. C. Marchant, Toledo; and Don S. Follett, Rockford.

Walter D. Bates has retired as representative for the **Steel Heddle Manufacturing Co.** His operations out

Mr. Bates

of Providence, R. I., have been taken over by Harry Hill, Steve Moore, and Mr. Bates' son, Windsor Bates.

The **Sun Chemical Corp.** has coordinated advertising, marketing, and public relations for its 32 divisions, and has appointed G. M. Basford Co. as its advertising agency. Among the divisions which make up the corporation is the **Warwick Chemical Co.,** which manufactures textile chemicals and water repellents.

John H. Kelley has been named New England manager for the **G. H. Tennant Co.** He has been with the firm for 13 years, and since 1949 has been manager of the Detroit office.

Carbide and Carbon Chemicals Co., division of **Union Carbide and Carbon Corp.,** has announced the formation of a southwestern division which will include the states of Missouri, Arkansas, Louisiana, Texas, Oklahoma, Kansas, Colorado, Wyoming, and Utah. F. J. Rauscher has been appointed division sales manager. Replacing him at St. Louis is H. L. Harwell. Other district office appointments are: J. W. Ross, Pittsburgh; J. R. Hulten, Philadelphia; J. F. Luther, Albany.

With the firm since 1946, Norman K. Anderson has been named general sales manager of the **Warner Electric Brake & Clutch Co.** He will be responsible for both automotive and industrial sales.

Are You Getting a Fair Day's Work for a Fair Day's Pay?

As Production Engineers we specialize in the utilization of

LABOR — EQUIPMENT — MATERIAL

Our list of clients reads like the Blue Book of American Manufacture, and in our files are many expressions as to our service and results accomplished, like the following:

"We have been well pleased with the services they have rendered us. They have well trained engineers, and we highly recommend them."
A SOUTHERN MANUFACTURER OF HOSIERY AND UNDERWEAR YARNS

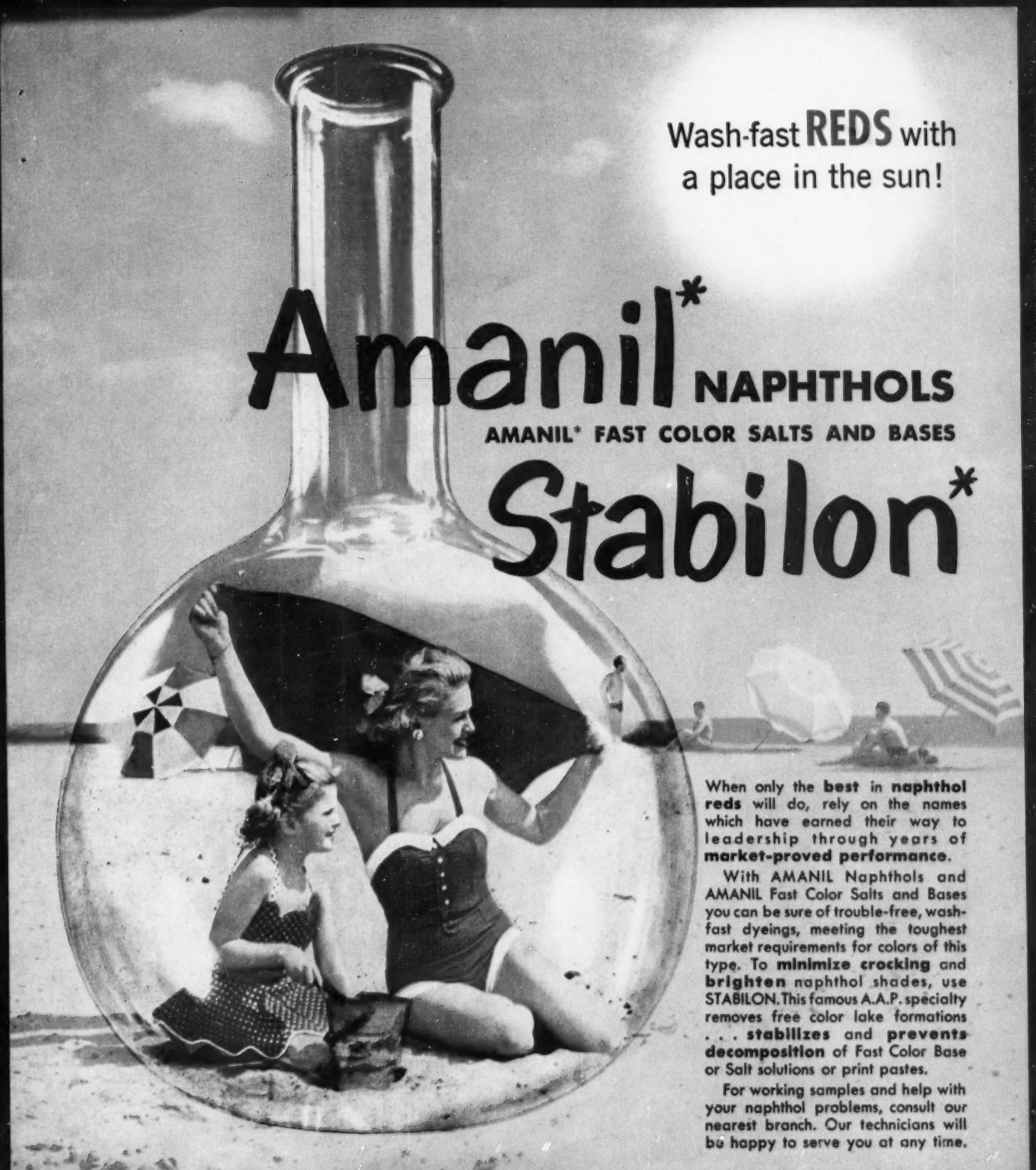
Write for a free copy of "Labor and Management Benefit by Industrial Engineering Principles," and our booklet "A Fair Day's Pay and in return A Fair Day's Work".

AMERICAN ASSOCIATED CONSULTANTS, Inc.

D. S. KEOGH, President
250 PARK AVENUE
NEW YORK 17, N. Y.

GRANT BUILDING
PITTSBURGH, PA.

H. B. CRAFT, Vice President and Manager of Operations
30 CAMDEN ROAD
ATLANTA, GA.



Wash-fast **REDS** with a place in the sun!

Amanil* NAPHTHOLS

AMANIL* FAST COLOR SALTS AND BASES

Stabilon*

When only the **best** in **naphthol reds** will do, rely on the names which have earned their way to leadership through years of **market-proved performance.**

With AMANIL Naphthols and AMANIL Fast Color Salts and Bases you can be sure of trouble-free, wash-fast dyeings, meeting the toughest market requirements for colors of this type. To **minimize crocking** and **brighten** naphthol shades, use STABILON. This famous A.A.P. specialty removes free color lake formations . . . **stabilizes** and **prevents decomposition** of Fast Color Base or Salt solutions or print pastes.

For working samples and help with your naphthol problems, consult our nearest branch. Our technicians will be happy to serve you at any time.

AAP

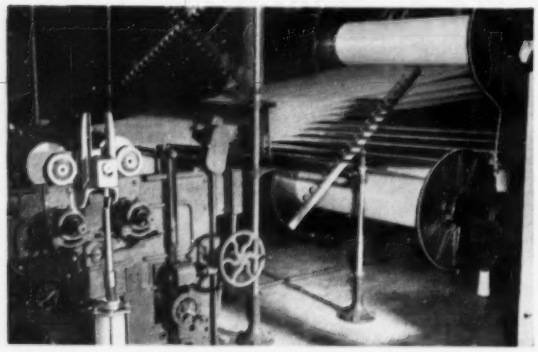
AMERICAN ANILINE PRODUCTS, INC.

50 Union Square, New York 3, N. Y.
Plant: Lock Haven, Pa.

Branches: Boston, Mass.
Providence, R. I. • Philadelphia, Pa.
Paterson, N. J. • Chicago, Ill.
Charlotte, N. C. • Chattanooga, Tenn.
Columbus, Ga. • Los Angeles, Cal.

Dominion Anilines & Chemicals, Ltd.
Toronto, Canada • Montreal, Canada

*Reg. U. S. Pat. Off.

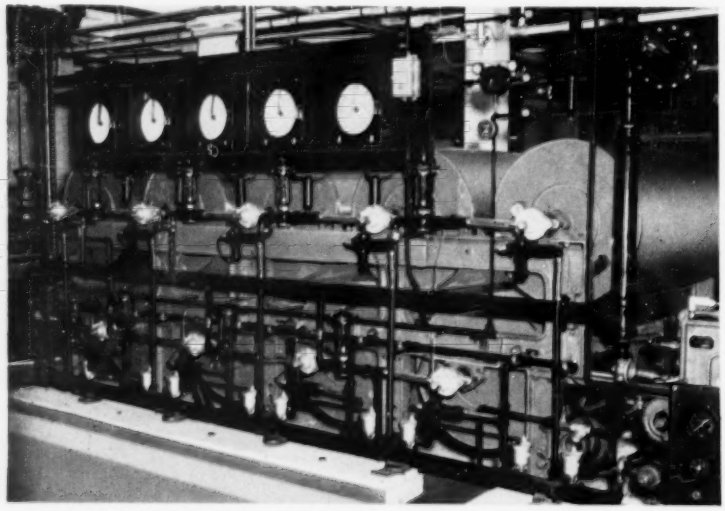


PNEUMATIC LOADING on squeeze rolls. At right is shown DOUBLE-DECK CREEL for synthetic filament warps.

PROVED

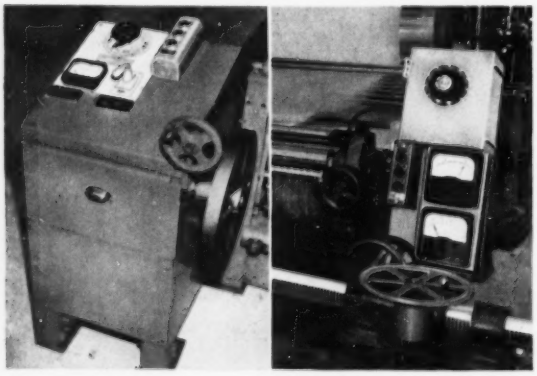
IN ACTUAL MILL OPERATIONS

. . . a faster, more versatile quality producer



INDIVIDUAL TEMPERATURE CONTROL on each cylinder insures high quality. The polished stainless steel cylinders with welded-in steel heads may be operated at pressures up to 35 p.s.i.g.

THE WPF&M MULTI-CYLINDER SLASHER



PUSH BUTTON CONTROL of multi-motor drive provides smooth and fast response to necessary speed changes. *No mechanical friction clutch.*

TENSION CONTROL PANEL conveniently located. TRAVERSING TAILSTOCK with handwheel to move arbor in and out.

In actual mill operations, the versatile WPF&M Multi-Cylinder Slasher has proved it can produce a consistent, high-quality warp on a wide range of natural, synthetic or blend fibers at high speeds and low operating costs.

The Multi-Cylinder Slasher is designed for and furnished with a superior slasher drive . . . the mill-proved multi-motor drive which completely eliminates the friction clutch and friction compensating devices along with friction maintenance. This all-electric drive provides a smooth constant tension wind-up of the loom beam and packs more yards on the loom beam.

This WPF&M Multi-Cylinder Slasher is one of the complete line of modern Slashers manufactured by the West Point Foundry & Machine Co.—specialists in Slasher Room machinery and equipment.

We will be glad to furnish you with complete details on the Multi-Cylinder Slasher without obligation, of course.

WPF&M WARP PREPARATION MACHINERY
Standard 2 and 3 Cylinder Slashers
Cyl-Air Slashers Air-Dri Slashers Multi-Can Slashers Callaway Sample Slasher
WPF&M Hi-Speed 4 Cylinder Slashers

SLASHER MODERNIZATION EQUIPMENT
Hi-Speed Head Ends with Stretch Control
Standard WPF&M Head Ends Multi-Motor Drives and Controls
Temperature, Speed and Tension Control Devices
Hi-Speed Size Boxes—Model 50 Size Boxes
Standard Size Boxes—Size Kettles and Equipment

WEST POINT FOUNDRY & MACHINE CO.
WEST POINT, GEORGIA

HELPFUL BOOKLETS FREE!

On this and the following pages is an excellent library of free textile literature. Select the books which will be helpful to you and list their numbers on the coupon.

Mail to TEXTILE INDUSTRIES.

★ ★ ★ ★ ★ ★ ★ ★ ★ ★

6-1 Finnell Combination Scrubber-Vac. Illustrated literature gives complete specifications and describes various methods of combination-machine-scrubbing, including method recommended for cleaning oily floors. Write Finnell Systems, Inc. 1300 East St., Elkhart, Indiana.

6-2 Analysis Procedures for Hydrogen Peroxide. Bulletin gives a critical summary of the most useful methods of assaying hydrogen peroxide solutions at all concentrations and under almost every conceivable condition. Write Buffalo Electro-Chemical Co., Station B., Buffalo 7, N. Y.

6-3 Room Cleaner for Textiles. Bulletin describes Motor-driven blower unit popular in cardrooms, spinning and other yarn processing departments in tandem with Parks-Cramer Frame Cleaner. Write Parks-Cramer Company, Fitchburg, Mass.

6-4 A Unique Yarn & Yarn Dyeing Service. Booklet describes in detail the reasons why Franklin Process service is unique to manufacturers and converters of yarn dyed fabrics. Write Franklin Process Company, 564 Eddy St., Providence, R. I.

6-5 A & G Roof Fans & Unit Ventilators. Bulletins give close up views and illustrate dimensions, capacities, typical arrangements and typical installations. Write Andrews & Goodrich, 336 Adams Street, Boston, Mass.

6-6 Electrical Controls for the Textile Industry. Circular includes shock-resistant, lint-proof Loom Switch and also Starters, Contractors and Combustion Starters in lint-proof NEMA XII enclosures. Write the Arrow-Hart & Hegeman Electric Co., 103 Hawthorne St., Hartford 6, Conn.

6-7 Polymers for the Textile Industry. Booklet describes Polyco Resin Emulsion Polymers for the Textile Industry and gives textile applications of Polyco Emulsion Polymers. Write American Polymer Company, Peabody, Mass.

6-8 SMM Roller Bearing Spindle. Bulletin describes principal features and main advantages of the SMM Roller Bearing Spindle for efficient production, improved quality of yarn and greater economy. Write Gubelin International Corporation, 35 West 53rd St., New York 19, N. Y.

6-9 Fundamentals of Industrial Water Treatment Processes. 24-Page booklet entitled "If You Use Water" discusses the fundamentals of the three major classifications of industrial water treatment based on ion exchange: softening, dealkalization, and deionization. Write Rhom & Haas Company, Resinous Products Div., Washington Square, Philadelphia 5, Pa.

6-10 Multi-Purpose Calender for Resin Purposes. Bulletin describes how calender may be set up for Friction application, Schreiner service and all types of embossing. It is unique in that it may be converted from one service to another in a few hours by a change of gearing and rolls. Write McKiernan-Terry Corp., Harrison, New Jersey.

6-11 Fulling and Scouring. Booklet entitled "Fulling and Scouring Wool Fabrics" discusses in detail two of the most important operations in the finishing of wool fabrics. Write Proctor and Gamble Co., Textile Finishes Sales Dept., Gwynne Building, Cincinnati, Ohio.

6-12 Ultraviolet Absorbers. 24-Page booklet describes how two new ultraviolet absorbers, Uvinul 400 and Uvinul 490, may be used as a means of controlling the harmful affects of radiation within the ultraviolet range. Write Antara Chemicals Div., General Aniline and Film Corp., 435 Hudson St., New York 14, New York.

6-13 Tension Meters. Measurement of tension of cotton yarns and synthetic filaments during warping, winding, throwing and other processing operations is discussed in technical bulletins. A Shuttle Tester is described for the weave room to measure the tension of yarns leaving shuttles. For major tension such as used in the manufacture of large tire-cord and heavy rugs, a special tension meter is shown. Write Tensitron, Inc., Harvard, Massachusetts.

6-14 Needle Temperature Indicator. Information on needle temperature indicator unit is available. This equipment may be used as a research tool in evaluating the effect of new finishes on fabric sewability and many other important factors in the textile industry. Write Singer Sewing Machine Co., Dept. TI-46, Room 701, 149 Broadway, New York 6, New York.

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7. **RAYON TELLS ITS STORY TO THE PUBLIC** — Folder containing reprints of advertisements explaining some of the many roles in which rayon is serving the American public. — AMERICAN VISCOSE CORPORATION, 350 5th Ave., New York 1, N.Y.

17. **A FAIR DAY'S PAY AND IN RETURN A FAIR DAY'S WORK** — 8-page booklet outlining the services offered to industry for the proper utilization of labor, material and equipment, and the resulting advantages for both labor and management. — AMERICAN ASSOCIATED CONSULTANTS, INC., 250 Park Ave., New York, N. Y.

19. **INDUSTRIAL BUILDING** — A 32-page booklet entitled "U.S.S. 12, U.S.S. 17 Stainless Steel Walls and Roofs for Industrial Buildings," is now available for distribution. This publication illustrates the use of type 410 and type 430 Stainless Steel Sheets in the construction of industrial and semi-industrial buildings. — U. S. STEEL CO., 525 William Penn Pl., Pittsburgh 30, Pa.

22. **THE WONALANCET WAY** — Is the title of an editorial booklet published five times a year and deals with current problems which appear worthwhile at the time they are written. — WONALANCET COMPANY, 128 Burke St., Nashua, N.H.

PLANT & PLANT MAINTENANCE . . .

102. **"TANK TALK"** — Sixteen page booklet of illustrations showing various types of elevated steel tanks constructed and erected by manufacturers as well as stand pipes, reservoirs, storage and high pressure vessels, cylinders, along with helpful technical data. Also a list of what a few of the cotton mills, etc., said. — R. D. COLE MANUFACTURING COMPANY, Newnan, Ga.

103. **HUMIDIFICATION, EVAPORATIVE COOLING** — Bulletins available displaying AMCO automatic self-cleaning atomizers, controls, and evaporative cooling equipment. — AMERICAN MOISTENING CO., 260 W. Exchange St., Providence, R. I.

107. **FINNELL SCRUBBERS** — Illustrated leaflets describing and giving specifications for the Finnell floor scrubbing machines. — FINNELL SYSTEM, INC., Elkhardt, Ind.

108. **MAPLE FLOORING** — Booklet describing finishing of Northern Hard Maple Flooring — list of M.F.M.A.-approved heavy-duty floor finishes. — MAPLE FLOORING MANUFACTURERS ASSOCIATION, Pure Oil Bldg., 35 East Wacker Dr., Chicago 1, Ill.

113. **COTTON MILL EQUIPMENT** — This book traces pictorially the steps in processing raw cotton into finished cloth. It shows the equipment needed for all phases of production, as well as containing a "Useful Information" section on Power Factor Correction, Lighting, Circuit Protection, etc. — WESTINGHOUSE ELECTRIC CORP., 511 Wood St., Pittsburgh 30, Pa.

117. **CLEANING SYSTEMS** — Booklet entitled "Certified Climate and Cleaning Systems" gives latest information on system. Products and uses fully discussed with two story layout of Certified Climate central station air conditioning system. — PARKE-CRAMER CO., Fitchburg, Mass., and Charlotte, N. C.

127. **SOLENOID VALVES** — Bulletin "V" lists sizes from 1/2 inch to 2 inches; valves for normally open or closed service; stainless steel or Jenkins disc seats; three way solenoid valves, etc.; typical installations. — THE JOHNSON CORP., Three Rivers, Mich.

129. **AIR CONDITIONING AND HUMIDIFICATION** — Catalog section 101 lists and briefly describes each item of the complete Bahnson line of equipment for textile mill air conditioning and humidity control. — THE BAHNSON COMPANY, Winston-Salem, N. C.

131. **"AIR PROCESSING"** — Set of three bulletins showing real meaning of the term, where it can be used, the requirements for a successful system, etc. — J. O. ROSS ENGINEERING CORP., 444 Madison Ave., New York 22, N. Y.

135. **COLOR CONDITIONING** — Booklet illustrated in color describes how Du Pont color conditioning puts color to work for you. Many ideas on safety brought out which color can aid. — E. I. DU PONT DE NEMOURS & CO., INC., Finishes Div., Wilmington 98, Delaware.

138. **METAL CONVEYOR BELTS** — Recent catalog describes and illustrates Ashworth's entire range of manufacture, including the new Flat Wire Belt design and application, along with their Woven Wire constructions and Positive Drive Chain Edge Belts. —ASHWORTH BROS. INC., Metal Products Div., Fall River, Mass.

146. **FUNCTIONAL GLASS BLOCK DATA** — Folder shows in detail daylighting function of Light-directing and Light-diffusing Functional Glass Blocks. —PITTSBURGH CORNING CORP., 307 4th Ave., Pittsburgh 22, Pa.

150. **RINCO HUMIDIFIERS AND COOLING SYSTEMS** — Bulletin describes new atomizers with construction lessening air consumption in humidifier systems, evaporative cooling systems. — ALDRICH MACHINE WORKS, Greenwood, S. C.

151. **INDUCTRIAL BRUSHES** — Illustrated booklet of industrial brushes featuring textile usage on shears, printing machines—also flock raising and cylinder brushes. — M. W. JENKINS SONS, INC., 444 Pompton Ave., Cedar Grove, N. J.

153. **LAMINATED TEXTILE PLASTICS**—Booklet by Synthane Corporation shows variety, application, and advantages of laminated plastic parts and supplies for the textile industry. Write: SYNTHANE CORPORATION, Textile Division, Oaks, Penna.

154. **AIR CONDITIONING FOR THE TEXTILE INDUSTRY** — Booklet shows advantages of air conditioned mills in better products and more efficient workers, and gives values of White & Co. air conditioning in particular. — WHITE & CO., INC., 1440 S. Tryon St., P. O. Box 533, Charlotte, N. C.

158. **FLOATING BOTTOM ROVING TRUCK** — Booklet by Excel Textile Supply shows advantages of roving truck with automatically adjusted bottom. Eliminates reaching over into truck by keeping load level within easy reach of operator. — EXCEL TEXTILE SUPPLY CO., Lee Ave., Lincolnton, N. C.

161. **AUTOMATIC CLEANING EQUIPMENT** — Complete booklet by American MonoRail shows working details and advantages of the Tri-Rail Cleaner, a great improvement over the original unit. Write AMERICAN MONORAIL CO., 13107 Athens Ave., Cleveland 7, Ohio.

162. **MODERN METHODS OF TEXTILE FLOOR MAINTENANCE** — Illustrated treatise on the history of floor cleaning in textile plants and a detailed description of new methods for reducing floor cleaning costs as well as preserving textile mill floors. — G. H. TENNANT COMPANY, 2530 N. Second St., Minneapolis 11, Minn.

169. **MACHINE BRUSHES** — Illustrated Folder shows many types of machine brushes and describing their particular use for printing, washing, brushing, singeing, and shearing is sent free upon request. — INDUSTRIAL BRUSH COMPANY, INC., Woodside Avenue, Little Falls, New Jersey.

173. **BLOWERS AND EXHAUSTERS** — Bulletin No. 3014-D describes types "E" and "RF" electric blowers and exhausters. Uses and full description of each with detail drawings. — BUFFALO FORGE CO., 490 Broadway, Buffalo 5, N. Y.

174. **PAINT STRIPPING BOOKLET** — Illustrated booklet providing helpful data on latest materials and methods for simplified stripping of paint. Methods described include: (1) steam gun; (2) hot flow-on; (3) cold spray; and (4) tank immersion. — OAKITE PRODUCTS, INC., 22 Thames St., New York 6, N. Y.

176. **STOKERS AND BOILERROOM EQUIPMENT** — For information on boilerroom problems, improvements and apparatus. — McBURNEY STOKER CO., 2110 Peachtree Rd., Atlanta, Georgia.

178. **BETTER WAYS** — Form 2020, condenser catalog of standard and special model Toledo Industrial Scales that are being used in receiving, shipping, and production operations by all industries including the textile field. — TOLEDO SCALE CO., Box 97 Toledo, Ohio.

181. **AIR FILTRATION** — Bulletin 224 describes and illustrates the Aero-Airmat, which is the Automatic Dry-Type air filter. Principle of operation, performance characteristics, construction and installation fully discussed. — AMERICAN AIR FILTER COMPANY, INC., 275 Central Ave., Louisville 8, Ky.

188. **PROGRESSING-CAVITY PUMPS** — A new principle in pumps. Self-priming, positive displacement, uniform flow features discussed. — BOBBINS & MYERS, INC., Pump Div., Springfield, Ohio.

POWER TRANSMISSION, MOTORS, BELTING, LUBRICATION . . .

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218. **BALL BEARINGS FOR TEXTILE MACHINERY** — A 40-page catalog illustrating Fafnir Ball Bearing units for replacement or new applications in all phases of textile processing. — THE FAFNIR BEARING CO., New Britain, Conn.

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227. WOOLEN AND WORSTED MILL ELECTRICAL EQUIPMENT — Booklet by Westinghouse follows processes through the mill and shows application and advantages of Westinghouse equipment.—Write for B-4698, WESTINGHOUSE ELECTRIC CORP., Box 2099, Pittsburgh 30, Pennsylvania.

229. DODGE GENERAL POWER TRANSMISSION MACHINERY — Catalog describes various types of power transmission apparatus by Dodge. Gives specifications, sizes, applications, and prices. Very comprehensive. Write: DODGE MANUFACTURING CORP., Mishawaka, Indiana.

235. JOHNSON LEDALOYL BEARING BRONZE —Illustrated booklet telling the complete story of Johnson Ledaloyl Bronze, the newest development in self-lubricated bronze for textile bearings and bushings. — JOHNSON BRONZE COMPANY, New Castle, Pa.

277. SPECIAL TEXTILE MOTORS — Bulletin 51B6055A describes special features of "Quick-Clean" motors, including discussion on free air flow, prelubricated bearings, rigid cast iron frame and double insulation. — ALLIS-CHALMERS MFG. CO., Milwaukee, Wis.

237. MOTOR CONTROL — Brochure gives description and engineering data on the Cutler-Hammer Motor Control for roving and spinning frames. Users listed and advantages discussed. — CUTLER-HAMMER INC., Milwaukee, Wisc.

238. TEXTILE LEATHERS CATALOG — Catalog by J. E. Rhoads & Sons gives characteristics and advantages of Rhoads "Tannate" leathers. Complete line is listed and described, and tips for correct installation. Copiously illustrated. — Write J. E. RHOADS & SONS, 35 North Sixth St., Philadelphia, Pa.

239. LICKERIN AND DOFFER BELTS — Brochure and full information on lickerin and Doffer belts. — TON-TEX CORPORATION, 16 West 61st St., New York 23, N. Y.

241. STANDARD OILITE BRONZE BEARING CATALOG — Lists more than 700 "Standard" Bearings, Cores, Bars and Plates carried in stock by hundreds of Oilite dealers and depots throughout the United States and Canada. Write AMPLEX DIVISION, Chrysler Corporation, P. O. Box 2718, Detroit 31, Michigan.

252. HOW TO STOP "LUBRICHAOS" FROM CUTTING PROFITS — Well-illustrated, factual booklet gives advantages and working principles of Alemite's "Coloroute" plan of lubrication control. Has step-by-step methods of putting plan into operation. — THE ALEMITE DIVISION, Stewart-Warner Corporation, Chicago 14, Illinois.

253. TEXTILE LUBRICATION — "Lubrication" a magazine published by the Texas Co. is available. Shows methods and means of lubricating chain drives in very comprehensive form. — THE TEXAS CO., 135 East 42nd St., New York 17, N. Y.

256. METERED LUBRICATION — Bulletin 6A has 12 illustrated pages showing how central lubricating systems are applied to combers, roving frames, winders, knitters, looms, etc. — BIJUR LUBRICATING CORP., Rochelle Park, N. J.

259. SUNOTEX MACHINE OIL — Booklet describing this machine oil as being "custom-made" for the textile industry. Advantages discussed and pictures of uses which includes knitting machinery. —SUN OIL COMPANY, Philadelphia 3, Pa.

262. SMALL PRECISION METAL PARTS — Catalog by Torrington Company describes many special precision metal parts made by its Specialties Division. — THE TORRINGTON COMPANY, Specialties Division, 500 Field Street, Torrington, Connecticut.

265. SERVICE PROCEDURE FOR BALL BEARINGS — A helpful manual for maintenance engineers giving helpful hints on disassembly, inspection, cleaning, lubrication, and replacement of ball bearings in any mechanism. — NEW DEPARTURE, Division of General Motors Corp., Bristol, Conn.

266. SILICONE LUBRICATION — Bulletin BG2-DC, describes properties of Silicone greases used in motors at high speeds and temperatures, on oven conveyors, tenter frames, can dryers, etc. Decrease by 10 to 1 in re-lubrication requirements described. —DOW-CORNING CORP., Midland, Mich.

280. NEW MOTOR CONTROL — 8-page promotional folder gives complete description of the new Arrow-Hart Type "LM" Loom Switch, said to be the first manual, across-the-line starter designed speciwically for textiles. Write INDUSTRIAL CONTROL DIVISION, Arrow-Hart and Hegeman Electric Co., 103 Hawthorne Street, Hartford 6, Conn.

INSTRUMENTS, STEAM SPECIALTIES . . .

301. JOHNSON ROTARY PRESSURE JOINTS — Bulletin describing the rotary pressure joint which requires no packing, no lubrication and no adjustment, giving installation and maintenance instruction, types sizes, dimensions and prices. — THE JOHNSON CORP., Three Rivers, Mich.

303. PROCESS CONTROL EQUIPMENT — Catalog containing brief description of standard and special process control equipment engineered for textile industry. Includes schematic diagrams. — MASON-NEILAN REGULATOR CO., 1190 Adams St., Boston, Mass.

309. ELECTRONIC RECORDER — 8-Page bulletin covers the TEKTOLOG Electronic Recorder which features simplified design, accuracy to + or — 1% of full scale, and self-starting operation from low energies. — FIELDEN INSTRUMENT DIVISION, Robertshaw Fulton Controls Co., 2920 North Fourth St., Philadelphia, Pa.

314. MOISTURE CONTENT CONTROL — Bulletin F-3156 giving details of features and benefits of moisture equipment control for slashers and textile applications. — BARBER-COLMAN CO., Rockford, Ill.

321. RED-RAY BURNERS — Bulletin describing use of Red-Ray Burners in preheating and partial drying to increase capacity of frame. — RED-RAY MFG. CO., 445 W. 45th St., New York, N. Y.

324. STROBOTAC — Informative reprint, "Strobotac Boosts Efficiency in Woolen and Synthetic Mills." — GENERAL RADIO CO., Cambridge 39, Mass.

337. COUNTING DEVICES — Catalog of Trumeter's complete line of counters for every application where counting, measuring or registering is required. Colored pictures illustrate each application. —TRUMETER COMPANY, 1265 Broadway, New York 1, N. Y.

339. NEW LUBRICATED PLUG VALVES — Illustrated booklet by The William Powell Co. features a new line of semi-steel and steel lubricated plug valves. Advantages include quick and positive shut off. — THE WILLIAM POWELL COMPANY, 2525 Spring Grove Ave., Cincinnati 22, Ohio.

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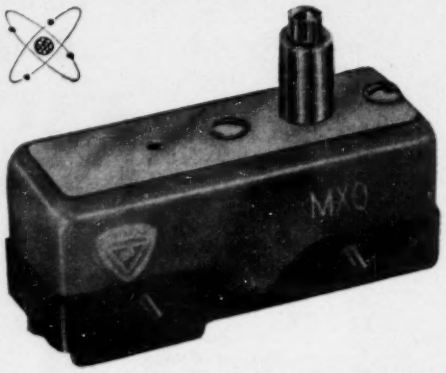

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401. LUMMUS DUSTLESS, STEEL BLENDING FEEDERS — Bulletin describing automatically closing, positively locking door on feeders to prevent overloading, choking.—ALDRICH MACHINE WORKS, Greenwood, S. C.

402. AUTOMATIC CLEANING AND OVERHEAD HANDLING FOR TEXTILE MILLS — 24-page bulletin describing the American Monorail Automatic Cleaner for preventing accumulaiton of lint on spinning, twisting, winding and warping machines. Also for cleaning monitors and card room ceilings — THE AMERICAN MONORAIL CO., Cleveland, Ohio.

404. LAPLESS ENDLESS SPINNER — Bulletin and full information will be supplied on lapless endless spinner and coning belting. — TON-TEX CORPORATION, 16 West 61st St., New York, N. Y.

408. CARD GRINDING INFORMATION — Outlines care of grinders, instructions on speed to run grinders, amount of oil to add to machine and other pertinent information. — B. S. ROY & SON CO., Worcester, Mass., and Charlotte, N. C.

412. SERVICE FOLDER — Folder covers textile metal products including spinning and twisting cylinders, card screens, etc. — JENKINS METAL SHOPS, INC., Gastonia, N. C.

414. WORSTED SPINNING — Bulletin explaining and illustrating Saco-Lowell's new system for worsted spinning, from top to yarn in five economical and efficient stages. — SACO-LOWELL SHOPS, 60 Batterymarch St., Boston 10, Mass.

415. DOUBLER-TWISTER FOR LARGE PACKAGES — Bulletin describing two new machines producing straight or tapered top bobbins. Suitable for filament or spun yarns up to three pound capacity. Individual thread stop motion fully discussed. — FLETCHER WORKS, INC., Philadelphia, Pa.

416. THE BRIEF SAGA OF THE RING TRAVELER — An interesting history relative to the ring eler, which is in reality the basis of the spinning frame. John Thorpe's invention of ring traveler, the development of the spindle, and the invention of Rabeth's Bolster type spindle are covered. — NATIONAL RING TRAVELER CO., Pawtucket, R. I.

418. PACIFIC CONVERTER — Graphic description of machine that cuts any synthetic tow; and when desired, blends it with wool or staple sliver, keeping the fibers parallel, and issuing an even sliver of accurate blend. — WARNER & SWASEY CO., Cleveland, Ohio.

419. TEXTILE APRONS — Illustrated folder showing the steps in manufacture of genuine leather aprons for all types of long draft spinning and card room machinery. — TEXTILE APRON COMPANY, East Point, Ga.

420. AUTOMATIC FILLING WINDING — Eight page, two color booklet describing the operation and mechanism of the Hacoba winder. — ATKINSON, HASERICK & CO., 211 Congress St., Boston, Mass.

421. CARD ROLL COVERS — Brochure describing the Davis seamless roll covers. Lists advantages, specifications and offers free trial. — THE TEXTILE LABORATORIES, P. O. Box 1003, Gastonia, N. C.

425. HANDY REFERENCE TABLES — Folder showing spinning traveler speeds, sizes of ring flanges, etc. — VICTOR RING TRAVELER CO., Providence, R. I. and Gastonia, N. C.

426. UNIRAIL UPTWISTER — Bulletin describes Universal Winding's headless package or bobbin take-up Unrail Uptwister which gives you higher yarn quality and better packages at faster speeds and lower costs, according to the bulletin. Well illustrated with advantages discussed. — UNIVERSAL WINDING COMPANY, P. O. Box 1605, Providence 1, R. I.

430. DIXON DATA — Dixon house organ entitled "Dixon Data," which is available in a new form every other month. These house organs contain information on spinning problems as they relate to saddles and component parts. — DIXON LUBRICATING SADDLE CO., Bristol, R. I.

432. PRECISION TEXTILE WINDING — Bulletin on Kidde Tensions and Density Control for winding rubber cones. — WALTER KIDDE & CO., INC., Belleville, N. J.

435. DOUBLE DECK TWISTERS — Bulletin describes Jumbo (8 oz. to 16 oz. headless or take-up spool packages) and Acme (up to 10 oz. packages) models for high speed twisting of silk, rayon, nylon, etc., to finest deniers. — U. S. TEXTILE MACHINE CO., Scranton 8, Pa.

436. MAINTENANCE INFORMATION FOR YOUR SCOTT TESTER — Booklet containing maintenance data for calibration of Scott Testers, clamps for testers, gear-box lubrication, and recording. — SCOTT TESTERS, INC., Providence, R. I.

438. HEADLESS PACKAGE TWISTER ELIMINATES REDRAWING — Literature shows high-speed Face Drive Twister for accurately building tapered or straight-end headless packages which go direct to quilling or warping without redrawing. — U. S. TEXTILE MACHINE CO., Scranton 8, Pa.

445. ROLLER BEARING SPINDLES — Illustrated booklet showing various types of Marquette Roller Bearing Spindles. The unique full-floating footstep bearing is pictured in cut-away views, and its advantages are described. — THE MARQUETTE METAL PRODUCTS CO., 1145 Galewood Ave., Cleveland, Ohio.

447. CONE WINDER — Form A95 describes the Foster Model 192 winder which produces the Foster knitting cone for spun yarns, warping cones and tubes for dyeing and twister supply. — FOSTER MACHINE COMPANY, Westfield, Mass.

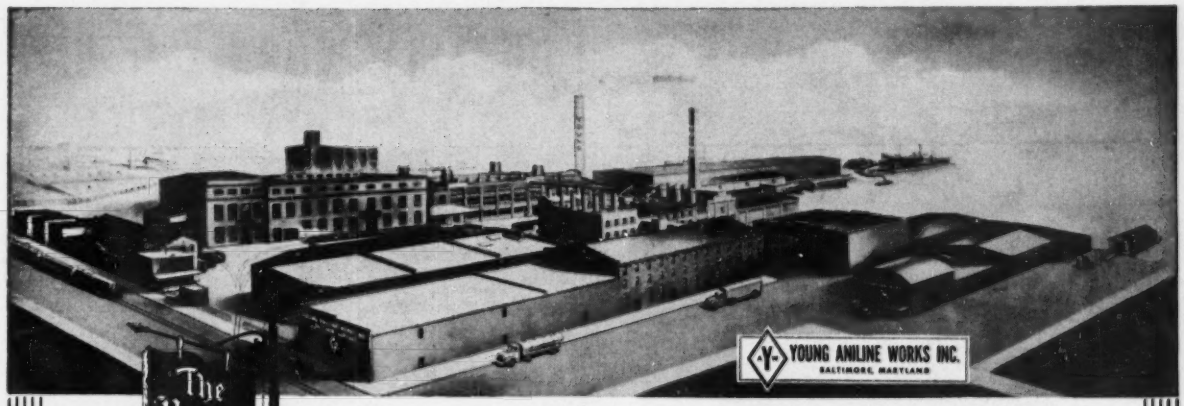
453. EVENNESS TESTER — Folder explaining how this Tester takes the guess out of quality control and each processing step from carding through spinning. — USTER CORPORATION, Charlotte, N. C.

455. PIN DRAFTS — Catalog describing the use and features of the machine, what it can do to cut costs in the processing of natural and synthetic yarns, along with specifications and installation data. — WARNER & SWASEY CO., 5701 CARNEGIE AVE., Cleveland, Ohio.

458. CONICAL RINGS AND FLYERS — Special data available on the Herr conical rings and flyers.— HERR MANUFACTURING CO., INC., 318 Franklin St., Buffalo 2, N. Y.

459. TENSION CONTROLS — Folder ddescribing tension compensation and automatic tension controls. Three models — Standard, Warp, and Double Disc fully described with specific application. — WALTER KIDDE & CO., INC., Belleville 9, N. Y.

461. PRECISE WIND MACHINE — Form A-92 describes the Foster Model 75 widely used for winding straight or pineapple cones and tubes of rayon, nylon and other filament yarns. — FOSTER MACHINE COMPANY, Westfield, Mass.



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462. TEXTILE MACHINERY PARTS CATALOG — A 24-page illustrated catalog describing the complete line of Dayco and Thorobred textile machinery parts including Cots, Aprons, Loop Pickers, Lug Straps, etc. — DAYTON RUBBER CO., Dayton, Ohio.

467. CARD CLOTHING — 8-page booklet by Benjamin Booth Company describes Strip-O-Matic Card Clothing and its advantages. Write: BENJAMIN BOOTH COMPANY, Allegheny Avenue & Janney Streets, Philadelphia, Pennsylvania.

469. SHORT CUT TO STAPLE FIBER SPINNING — Color brochure shows the ten steps in operation of the Turbo Tow Stapler, gives technical details and diagrams. — TURBO MACHINE COMPANY, Lansdale, Pa.

471. FACTS ABOUT YOUR FLYERS AND SPINDLES — Booklet by Ideal Machine Shops shows how smooth flyer and Spindle operation can help produce higher and more efficient output, good Quality yarn, minimum wear, and larger bobbins. Write: IDEAL MACHINE SHOPS, Bessemer City, North Carolina.

473. CUSTOM MADE THREAD GUIDES — Illustrated booklet describing uses and physical properties of the "AISiMag" line of Thread Guides. Advantages fully discussed with picture and specifications of each type. — AMERICAN LAVA CORP., Chattanooga 5, Tenn.

474. BALL BEARING COMB BOXES — Southern States Equipment Corp. offers literature on their famous C-1 Ball Bearing Comb Boxes. Description, working principle, cut-a-way views shown. — SOUTHERN STATES EQUIPMENT CORP., Hampton, Georgia.

475. TEXTILE ROLL COVERINGS AND MILL SUPPLIES — Color Booklet by Armstrong shows and describes their complete line of textile roll coverings, including also loom supplies, mill supplies, Roll covering for Cotton, silk and Synthetic and Woolen and Worsted systems. An excellent guide book. — ARMSTRONG CORK CO., Industrial Div., Lancaster, Pa.

476. TEXTILE FIBER OPENER FOR COTTON SYNTHETICS, WOOL — New brochure by Cen-Tennial Cotton Gin Co. gives complete data on the Cen-Tennial Opener which incorporates improvements on the original SHIRL Opener. Complete operating procedure is described. — CEN-TENNIAL COTTON GIN CO., Columbus, Ga.

476. TIPS ON CARDING PROCEDURE—Monthly bulletin by Ashworth Brothers includes many useful tips and advice on carding operation, maintenance and care and is available to anyone interested. Bulletin is a reprint of section appearing on green paper in this issue. — ASHWORTH BROTHERS, Fall River, Mass.

477. METALLIC CARD CLOTHING — Color booklet by Platt Brothers describes their Patent Metallic Card Clothing. Well-Illustrated it gives applications, types of clothing for all fibers, etc. Write TEXTILE INDUSTRIES, 806 Peachtree Street, Atlanta, Georgia.

WEAVING, SLASHING . . .

501. LOOMS — An accordion type folder is available entitled "Unfolding to You the World's Largest Line of Looms." Information on all types fully discussed. — CROMPTON & KNOWLES LOOM WORKS, Worcester 1, Mass.

502. COUNTING AND MEASURING DEVICES — Condensed textile catalog illustrating and describing pick counters, hank counters, cut meters, measuring counters. Wide range of counting devices for production recording on all types of textile machinery. — VEEDER-ROOT, INC., Hartford, Conn.

503. WEAVER'S KNOTTER — A catalog on the Boyce Weaver's Knotter giving a few instructions as to its use, recommendation as to the proper type knotter for the various types of yarns, and the spare parts that go to make up the knotter. — A. B. CARTER, INC., Gastonia, N. C.

504. LOOM SUPPLIES — Literature describing complete line of straps, strapping, pickers, dobby cords, sticks, binders, bumpers, brake lining and allied products. — E. H. JACOBS NORTHERN DIV., THE BULLARD CLARK CO., Danielson, Conn.

506. SLASHING HINTS — A 20-page booklet offering helpful hints on warp sizing. Subjects: Size cooking equipment, section beam tension, sizing selvages, cooking, use of split rods, weighing for the mix, tips on cooking, equipment, storage in kettles, etc. — SEYDEL-WOOLLEY & CO., 748 Rice St., N.W., Atlanta, Ga.

507 VARIABLE SPEED SLASHER DRIVE — Reeves bulletin G-503 describes their Servo-Control slasher drive which automatically controls tension from creel to beam, and which controls the stretch in the slasher. — REEVES PULLEY CO., Columbus, Ind.

508. LOOM PRODUCTION CHARTS — Convenient celluloid card showing yards per loom per week of 40 hours at various loom speeds. — RALPH E. LOPER CO., Greenville, S. C.

509. MULTI-MOTOR SLASHER DRIVES — Booklet designed to bring the descriptive information on multi-motor slasher drives up to date and emphasize the improvement in the drive through the use of Rototrol for the control of winding tension. — WESTINGHOUSE ELECTRIC CORP., 511 Wood St., Pittsburgh 30, Pa.

511. ALUMINUM BEAMS — Catalog No. 1-21 describes Hayes magnesium and aluminum specialties for the textile industry. Illustrates this company's beams that are one-third the weight of conventional types. — HAYES INDUSTRIES, INC., Jackson, Mich.

517. LOADING SYSTEM — Bulletin 417, on pneumatic loading system for Saco-Lowell slasher size box squeeze rolls, contains installation photo, features, specifications, and prices. — THE FOXBORO COMPANY, Foxboro, Mass.

521. STEEL WARP BEAMS — 20 page Catalog No. 45 illustrating Standard and Special Purpose Warp Beams for the weaving industry, both broad-loom and narrow fabrics. Also Textile Machinery Specialties. — MILTON MACHINE WORKS, INC., Milton, Pa.

524. JOHNSON WARP SIZES — 12-page fully illustrated booklet, describing the 7 cylinder sizer with stretch indicator and finger-tip control of stretch. A point-by-point analysis. — CHARLES B. JOHNSON MACHINE WORKS, Piercy & Holsman Sts., Paterson, N. J.

530. ROTARY UNIONS — New catalog shows how to cut costs, get better sealing on can dryers, slashers, calenders, etc. Catalog No. 500 entitled "Where Good Connections Count." — PERFECTING SERVICE COMPANY, Atando Ave., Charlotte, N. C.

536. HOMOGENIZER IMPROVES SLASHING — Pamphlet by Manton-Gaulin Manufacturing Company shows how mechanical conversion of size by the Gaulin method produces better size. Gives installation pictures and specifications. — MANTON-GAULIN MANUFACTURING COMPANY, INC., Everett, Massachusetts.

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537. WEST POINT'S HOT AIR SLASHER — Bulletin describes advantages and capacities of new hot air slasher by West Point Foundry and Machine Works. Detailed specification included. — WEST POINT FOUNDRY AND MACHINE WORKS, West Point, Georgia.

538. AIR SLASHER DRYER — Pamphlet by Proctor & Schwartz shows construction and operating details of the Proctor Air Slasher Dryer. Advantages listed and cut-away view shown. — PROCTOR & SCHWARTZ, INC., 7th St. and Tabor Rd., Philadelphia 20, Pa.

539. AUTOMATIC REGAIN CONTROL OF RAYON AND SYNTHETIC FIBRE SLASHING—Technical booklet by Minneapolis-Honeywell gives data on their electronic, Mult-range "Moist-O-Graph" system for controlled regain. Write for No. B54-66. — MINNEAPOLIS-HONEYWELL REGULATOR CO., Station 64, Phila. 44, Pa.

540. SLASHING EQUIPMENT — Brochure by Tower Iron Works shows different types of slashing equipment, enumerating characteristics and advantages of each. — TOWER IRON WORKS, 50 Borden St., Providence 3, R. I.

545. NOPCO CHEMICAL DATA SHEETS — Now available are Nopcostats, Nopco sizes N and D. Important points in Warp Sizing, Interpretation of analysis, Wetting Agents, Balanced wool and worsted oils, Acetate Warp Sizing, Viscose warp sizing, Rayon soaking. — NOPCO CHEMICAL CO., Harrison, New Jersey.

DYEING, FINISHING CLOTH ROOM . . .

602. CONTROLLED VAT DYEING — Calco technical booklet No. 828 discusses Stabilization of Vat Dyes at Elevated Temperatures, Instrumental and Analytical Measurements, Lenco Potentials.—AMERICAN CYANAMID CO., Calco Chemical Division, Bound Brook, New Jersey.

606. HYDRAULIC POWER UNITS — Literature describing hydraulic unit, motor, pump, reservoir, valving a small compact unit for operating of hydraulic calenders, presses, hydraulic controls, etc.— B. F. PERKINS & SON, INC., Holyoke, Mass.

610. PROCTOR DRYING MACHINERY FOR THE TEXTILE INDUSTRY — Illustrated, descriptive catalog on all types of dryers for raw stock, warps, package dyed and automatic skein yarn. Also includes Pre-Boarding and Automatic Boarding Machines for hosiery. — PROCTOR & SCHWARTZ, INC., 7th and Tabor Rd., Philadelphia, Pa.

615. HIGH PRODUCTION EXTRACTOR FOR RAW STOCK — YARN — HOSIERY — Descriptive bulletin and full information on automatic Twintainer Extractor with bottom-unloading removable baskets. Machine replaces three conventional extractors, lowers labor costs. — FLETCHER WORKS, INC., Philadelphia, Pa.

616. FINISHING DRIVES — 32-page booklet covers complete drives Westinghouse has engineered for the textile finishing industry. Describes all types of finishing ranges and discusses advantages of Westinghouse drives for these installations. "Packaged" drives for batch processes covered — WESTINGHOUSE ELECTRIC CORP., 511 Wood St., Pittsburgh 30, Pa.

617. AUTOMATIC CONTROL SYSTEM FOR CONTINUOUS BLEACHING — Illustrated folder describes the new method for controlling the temperature, pressure, and liquid level in the continuous bleach operation. — TAYLOR INSTRUMENT COMPANIES, Rochester 1, N. Y.

620. REGENERATION OF ZEOLITE WATER SOFTENERS — Booklet explains advantages of International's Lixate Process in regeneration of zeolite water softeners. Shows how it cuts costs and does a better job. — INTERNATIONAL SALT COMPANY, INC., Scranton, Pennsylvania.

623. SELVAGE GUIDER — The Marshall and Williams positive overfeed and selvage guider is described in a brochure as being developed to meet the most modern requirements of the textile finishing industry. Full description, pictures and advantages discussed. — MARSHALL AND WILLIAMS CORPORATION, 46 Baker Street, Providence 5, R. I.

627. SINGLE APRON STOCK DRYERS — Folder presenting the latest idea in automatic drying which every mill having drying problems can profitably use to meet modern manufacturing conditions. — C. G. SARGENT'S SONS CORP., Graniteville, Mass.

631. ELIMINATE DYE-BATH SHOCK — Data sheet by Foxboro shows how woven fabrics and hosiery may be protected from Crow's-feet, uneven shade, creasing caused by too rapid cooling of goods. Write for data sheet, 220-60, FOXBORO COMPANY, 487 Neponset Ave., Foxboro, Mass.

632. LUG STRAP WASHERS — Series 1-C illustrated bulletin detailing right and wrong application and use of washers. — E. H. JACOBS NORTHERN DIV., Danielson, Conn.

637. BALL BEARING TURN TABLE — Leaflet describing this 48" diameter steel turn table for use in mills where the cloth is delivered in rope form to trucks and the trucks are placed in position ahead of a Scutcher or Cloth Opening Machine. Advantages discussed. — BIRCH BROTHERS, INC., 32 Kent St., Somerville, Mass.

638. DYEING AND FINISHING MACHINES — Booklet by James Hunter Machine Company shows pictures, applications, and advantages of following: "Vapo Jet" Dryer; "Hunter Dye Beck"; "Flexreel" Rope Washer; Continuous Cloth Washer; Model "S" Dye Kettles; Compartment Washher; Fulling Mill; Top Dyeing Machine; "Uniflow" High-speed Tenter Dryer; Cloth Carbonizer. — JAMES HUNTER MACHINE CO., North Adams, Mass.

639. ROTARY DYEING MACHINE — Booklet No. 425 illustrating the features of these stainless steel machines used for dyeing hosiery, hats, gloves, socks, etc. — SMITH, DRUM & CO., Allegheny Ave., at 5th St., Philadelphia 33, Pa.

653. GUIDERS AND TENSION DEVICES — Illustrated and described are the Mount Hope Precision Guiders and open width Tension Devices used for accurate straight line guiding of open width goods. Bulletin SG-PG. — MOUNT HOPE MACHINERY CO., 15 Fifth St., Taunton, Mass.

654. ION EXCHANGERS — Bulletin details a general history of ion exchange, gives data on proper selection of ion exchangers and lists general applications in the treatment of water. — PERMUTIT COMPANY, 330 West 42nd Street, New York 36, New York.

655. PAPER TUBES FOR YARN AND CLOTH— Complete data to help you solve your paper tube problems. Overnight delivery of yarn and cloth paper tubes and boards. Shows how warehousing of these items can be avoided. — TEXTILE PAPER PRODUCTS, Cedartown, Ga.

658. 6-BEAM MULTIPLE DYEING — Information on the Morton System Horizontal Beam Dyeing machine is available. Features include minimum handling of beams and the use of a common or individual dyebath for as many as six beams. — MORTON MACHINE WORKS, 1718 Third Avenue, Columbus, Georgia.

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DYESTUFFS, CHEMICALS, SOAPS . . .

700. COTTON FINISHING OILS — New booklet by Twitchell devoted to finishing Sanforized Fabrics contains such specific data as re-wetting speed, imparted softness, resistance to yellowing, and "balance" of these properties. — EMERY INDUSTRIES, INC., Dept. 5, Carew Tower, Cincinnati 2, Ohio.

701. MAGNESIUM APPLICATIONS — Case history information on magnesium application in the textile field, published bi-monthly with latest developments in the magnesium industry. — DOW CHEMICAL CO., Midland, Mich.

705. THEORETICAL AND APPLIED SILK-SOAKING — Attractive 23-page booklet outlining methods of silk-soaking and outlining investigation on the soaking, back-winding and degumming of silk. — HART PRODUCTS CORP., 1440 Broadway, New York 18, N. Y.

706. RHONITE RESINS — Booklet describes the Rhonite Resins as being developed to impart hand to fabrics ranging from stiffness through full resiliency to silky suppleness, depending on the demand of the season. Full information and uses given. — ROHM & HAAS COMPANY, Washington Square, Philadelphia, Pa.

710. DEPUMA — An odorless, viscous, non-evaporating emulsion which is highly efficient as an anti-foam, useful in all phases of dyeing and printing. — AMERICAN ANILINE PRODUCTS, INC., 50 Union Square, New York, N. Y.

713. LIOVATINE ED — Vat dyeing assistant increasing penetration and level dyeings with maximum yield of color. — SANDOZ CHEMICAL WORKS, 61 Van Dam St., New York City.

714. NEW SODA ASH BULLETIN — 64-page edition contains both new material and revisions of previously used data covering the subject. Ask for Bulletin No. 5 — SOLVAY SALES DIV., 40 Rector St., New York 6, N. Y.

715. AQUAROL AND ARKANSAS PRODUCTS— Bulletin on Aquarol water repellent finish with method of preparing bath; also on other Arkansas products for cotton, wool, silk and yarn hosiery processing. — ARKANSAS CO., INC., Newark, N. J.

721. SURFAX 1288 — Product data sheet explains this useful wetting and rewetting agent. Described as being water soluble at all temperatures and is a highly concentrated, economical surface active agent. — E. F. HOUGHTON & CO., 303 W. Lehigh Ave., Philadelphia, Pa.

727. COLOR PRINCIPLES — Booklet available from Sandoz Chemical describes the fundamental principles of color and its measurement. Booklet has been adopted by several of the leading textile schools. — Write: SANDOZ CHEMICAL WORKS, INC., 61 Van Dam Street, New York 13, N. Y.

728. UNIQUE YARN AND DYEING SERVICE— Booklet by Franklin Process tells why Franklin Process Yarn Dyeing Service is one of the top package yarn dyeing services. Also includes table showing relative fastness of dyestuffs used on various fibers. — FRANKLIN PROCESS CO., 564 Eddy St., Providence, R. I.

729. STATIC AND STATIC CONTROL — Papers deal with historical background of static electricity and the problems caused by it along with methods of controlling them. — DEXTER CHEMICAL CORP., 819 Edgewater Road, New York 59, N. Y.

733. WOOL OILS — Twin booklets by Proctor and Gamble tell of the influence of wool oils in producing quality yarns and fabrics, and of Proctor and Gamble's Proxol T, an outstanding wool oil. —PROCTOR AND GAMBLE DIST. CO., Cincinnati, Ohio.

734. BLEACHING WITH PEROXYGEN CHEMICALS — Bleaching methods for cotton, rayon, nylon and animal fibers are comprehensively treated in Becco Research and Development Dept., Bulletin No. 52, now available. — BUFFALO ELECTRO-CHEMICAL CO., INC., Station B, Buffalo 7, New York.

745. RAPIDASE FOR DESIZING — Bulletin explaining in detail the properties and characteristics of Rapidase. — WALLERSTEIN CO., INC., 180 Madison Avenue, New York 16, N. Y.

749. WATER SOLUBLE GUMS — Booklet giving the origin, gathering, marketing and uses of water soluble gums. This booklet No. 23 is beautifully illustrated, and is one of the few treatises on the subject. — JACQUES WOLF & CO., Passaic, N. J.

753. TRITON X-100 — Booklet available describing this highly concentrated detergent and wetting agent. Main uses fully discussed and chemical properties brought out. — ROHM & HAAS COMPANY, Philadelphia 5, Pa.

757. THE CHEMISTRY OF CYNANURIC CHLORIDE — Very comprehensive technical text by American Cyanamid Co. Gives Physical Properties, Reaction Chart, Chemical Properties, Potential Applications, Toxicity, Table of Alcohol Reactions, Table of Amine and Related Compound Reactions. — AMERICAN CYANAMID CO., 30 Rockefeller Plaza, New York 20, New York.

763. TEXTILE CHEMICALS — Booklet, well executed and in color, tells of American Viscose Company's "Aviaco" textile chemicals for lubricating, softening, static control, sizing and finishing. — AMERICAN VISCOSE CORPORATION, Textile Research Department, Marcus Hook, Pa.

766. DU PONT PEROXIDE BLEACHING SYSTEMS — New book illustrating and describing this continuous peroxide bleach system. Layouts and other information included. — E. I. DU PONT DE NEMOURS & CO., ELECTROCHEMICAL DEPT., Wilmington, Del.

768. TEXTILE CHEMICALS — Buying guide and reference book giving facts about Amalgamated Products, the fabrics on which they give best results, their proper application, and their chemical composition. — AMALGAMATED CHEMICAL CORP., Philadelphia 34, Pa.

769. SURFACE TENSION DEPRESSANT — The Booklet, "Mercerizing and Alkamerce — The Ideal Dry" which can be used as a wetting agent; a dye leveling agent, a penetrant in package dyeing. — HART PRODUCTS CORP., 1440 Broadway, New York, N. Y.

773. TECHNICAL CHEMICAL DATA SHEETS— Complete set for dyeing, printing and finishing operation, showing major operations, performance and advantages. — ONYX OIL & CHEMICAL CO., 190 Warren St., Jersey City 2, N. J.

774. ROYCE TEXTILE CHEMICALS — This booklet briefly describes the leading Royce products for textile processing, printing, dyeing and finishing. —ROYCE CHEMICAL COMPANY, Carlton Hill, N. J.

KNITTING . . .

801. THE WILDMAN SINGLEHEAD FULL-FASHIONED HOSIERY MACHINE — Literature on request from the WILDMAN MFG. CO., Full-Fashioned Division, Norristown, Pa.

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When you specify EMKAY Chemicals for your textile processing . . .

EMKAY chemicals have long been used by textile weavers, dyers, and finishers when economy, high quality, and service, are essential. Our years of experience and service qualify us to help solve your specific problem.

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808. REINER WARPER — Full width and sectional warpers for all requirements in the knitting and weaving industry fully described in recent catalog. — ROBERT REINER, INC., Weehawken, N. J.

818. FORGED HEAL ALUMINUM BEAMS — Bulletin 49-A shows new beam capable of holding high yardage of nylon and rubber warps, with specifications. Also describes permanent mold aluminum tricot and section beams. MILTON MACHINE WORKS, INC., Milton, Pa.

823. VARIABLE STRIPER — Booklet available describing Supreme's complete line of Automatic Variable Stripers and Pattern Placer Machines. — SUPREME KNITTING MACHINE CO. INC., 105 Johnson Ave., Brooklyn 6, N. Y.

828. THE KIDDE KNITTER — Bulletin describing this newest in Raschel-type warp knitting machines and higher production attained with it. — KIDDE MANUFACTURING CO., INC., Farrand St., Bloomfield, N. J.

SEWING MACHINES . . .

924. BUTT-TACKING SEWING MACHINE — Booklet describes an operating installation of the Merrow single thread butt-tacking sewing machine. Gives performance data, and advantages of butt-tacking. — THE MERROW MACHINE COMPANY, 28 Laurel Street, Hartford, Connecticut.

925. SEWING MACHINES — The Lock-Stitch bulletin No. 258 describes and illustrates new, high speed, single needle Union Special Lock-Stitch machine for general purpose industrial sewing operations. — UNION SPECIAL MACHINE CO., 407 N. Franklin St., Chicago 10, Illinois.

MATERIALS HANDLING . . .

1003. CASTERS AND WHEELS — 192 pages, describing casters and wheels suitable for all types of industrial applications. Every mechanical engineer and purchasing agent should have this. — DARNELL CORP., LTD., Long Beach 4, Calif.

1004. PITTSBURGH COLLAPSIBLE CARGO-TAINERS — Stacked they lock in place and permit visible inventory; collapsed they rest in small area. Base permits entry by all types of lift trucks. Write for brochure MH-15.—PITTSBURGH STEEL PRODUCTS COMPANY, Pittsburgh 30, Pa.

1006. LANE CANVAS BASKETS — 16-page illustrated booklet describing the Lane line of canvas baskets for textile use.—W. T. LANE & BROTHERS, Poughkeepsie, N. Y.

1007. OVERHEAD HANDLING EQUIPMENT — 56 pages of illustrations showing successful applications of monorail systems to meet every kind of handling problem. — THE AMERICAN MONORAIL CO., 3106 Athens Ave., Cleveland 7, Ohio.

1008. CASTERS AND WHEELS — An illustrated booklet with complete specifications showing a complete assortment of Cotton Textile Casters. — THE COLSON CORP., Elyria, Ohio.

1010. CONVEYOR KEY BOOK — A guide to production "step-ups" now possible with modern conveying. Shows time-and-effort savings. Well illustrated with photos showing plant layouts and sketches showing where, how and why different types of conveyors are used for maximum results. — LOGAN CO., 1115 Franklin St., Louisville, Ky.

1011. TEXTILE TRUCKS — Booklet describing doff boxes, frames and trucks, yarn, waste, platforms, conditioning, steep lap, fiber, utility trucks, etc. Uses and description. — EXCEL TEXTILE SUPPLY CO., Lincolnton, N. C.

1013. "A STORY OF TRACTOR TOOLS AND THEIR USE" — Comprehensive illustrated guide effectively present in cartoon-style the many principal uses for this type of equipment. — HYSTER CO., 2903 N.E., Clackamas St., Portland 8, Ore.

1030. CDF RECEPTACLES — This 32-page catalog, R-11, profusely illustrated in color, shows Continental-Diamnod's line of boxes, trucks, cans, barrels, baskets and trays. Complete description and specifications are given on each item. — CONTINENTAL-DIAMOND FIBRE CO., Newark 11, Del.

1032. ELECTRIC CHAIN HOISTS — Bulletin 852 describing Robbins & Myers Type "JC" Electric Chain Hoists. Capacities 500, 1000 and 2000 pounds. —ROBBINS & MYERS, INC., Hoist & Crane Div., Springfield, Ohio.

MISCELLANEOUS . . .

1102. BALING PRESSES — An illustrated folder describing this manufacturer's complete line of balers for all materials. Both Downstroke and Upstroke models. — ECONOMY BALER CO., Ann Arbor, Mich.

1103. UNBRAKO SCREWS — Illustrated 16-page booklet No. 570 gives data on Unbrako hollow set screws, with knurled point, self-locking features. Includes miscellaneous screw and locking nut data. — STANDARD PRESSED STEEL CO., Jenkintown, Pa.

1108 FABRICATION OF U. S. STAINLESS STEELS — 136-page book covering use of stainless steel in textile equipment from cutting to cleaning. Includes corrosive-resistance tables for chemicals. — CARNEGIE-ILLINOIS STEEL CORPORATION, Pittsburgh, Penn.

1111. BRUSHES — A 26-page booklet is now available which describes and illustrates the manufacturer's line of brushes for the textile industry. — GASTONIA BRUSH COMPANY, Gastonia, N. C.

1112. THE RANDOM WEB PROCESS — Bulletin No. 101 describes the Dando-Webber and Rando-Feeder machines, and discusses the origin and development of the Random Web process which produces a non-oriented web suitable for processing into felts, wadding, heavy mats and non-woven fabrics on a continuous basis. Engineering data and cut-away diagrams. — CURLATOR CORPORATION, Textile Division, 565 Blossom Rd., Rochester, N. Y.

1113. MACHINE KNIVES — Catalog and price sheets describing the company's line of knives for use on textile machinery. — TAYLOR-STILES & CO., 21 Bridge St., Riegelsville, N. J.

1115. TEXTILE WRAPPING MACHINES — Brochure describing automatic wrapping machines for various types of textile products, including the new Hayssen V-Type Underfold, most protective package made. — HAYSSEN MANUFACTURING CO. Sheboygan, Wisconsin.

1122. BALING PRESSES — Bulletins available describing this company's line of motor-driven and hydraulic baling-presses for finished-goods, textile fibers, wool, and waste of all kinds. — LOGEMANN BROTHERS CO., 3150 West Burleigh St., Milwaukee, Wis.

Slasher Moisture Control

(Continued from page 99)

The action of the controller is to continuously adjust the speed of the machine so that the moisture content is constantly held at the controller setting, rather than being allowed to vary between established limits.

In the pilot installation, moisture content was held at 7% plus-or-minus one per cent on a slasher driven by flat belt from an overhead lineshaft.

The B&W Automatic Moisture Controller can be applied to any operating slasher without major modification to the slasher or slasher drive. The controller is normally supplied with an indicating meter that continuously shows moisture content above or below controller setting. A chart recorder is available at slight extra cost.

B & W Electronic Research Laboratories, 5629 Goodwin Ave., Dallas 6, Texas.

For additional data, request item F-118, using Handy Return Card on page 204.

NEW Equipment AND MATERIALS

Other items are described on pages 95, 97, and 99

Water Repellency for Life of Garment with Silicone Finish

Water-repellent clothing finishes that simply fade away under successive dry cleanings and launderings may now be a problem of the past for wearers of most synthetic-fiber garments.

A new silicone ingredient for textile finishes—G-E "Dri-Film" water-repellent—provides durable water-repellency, often for the life of the garment, and considerably enhances the drape and appearance of most synthetic fabrics.

Silicone treatment permits the fabric to shed beverages and many food-stuffs without being stained. Also, it can provide a variety of choices in "hands" for synthetic fibers: a soft, full hand; a rich, full-textured hand; or a hand as dry and as firm as that found in fine worsteds. Excellent wear resistance and wrinkle recovery are provided for garments, since these chemicals lubricate fiber surfaces and preserve tensile and tear strength.

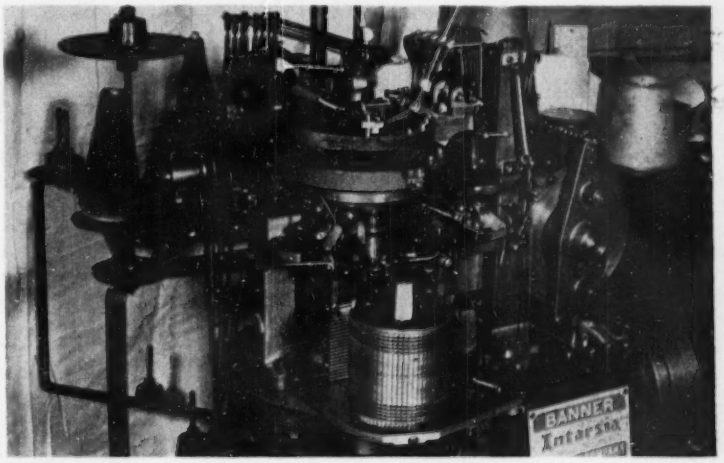
Officials of the Cravenette Company, Hoboken, N. J., producers of "Cravenette Super Silicone" water-repelling preparation incorporating G-E Dri-Film water repellent, have reported that non-oily spots may easily be removed from a silicone-treated suit by sponging with a damp cloth. Oily spots can be eradicated by regular dry cleaning or laundering.

Cravenette officials also said that silicones even help manufacturers to sew garments faster, because silicones act as a lubricant for high-speed sewing needles and thus prevent cutting fibers in the fabric. The chemicals also permit fabrics to literally "breathe" air, while shedding water.

Silicone finishes are expected to have primary value on fibers such as rayon, acetate, viscose, nylon, Orlon and other fiber blends. Cravenette Super Silicone is available to finishers, mills, and converters in the textile field.

General Electric Co., Silicone Products Dept., Pittsfield, Mass.

For additional data, request item F-106, using Handy Return Card on page 204.



Automatic Knitter Inlays Clear, Solid Color Patterns in Hosiery

Because the Hemphill Company's most recently developed automatic circular hosiery knitting machine inlays clear, solid color patterns in stockings with practically the same precision and attractive results as craftsmen inlay wood in wood to produce ornamental designs, it has been designated the Vari Inlaid Pattern, Intarsia Machine.

A time saving feature of the V.I.P. machine is its ability to "press off" socks. That is, the hose is individually dropped from the knitting cylinder immediately upon completion. The hose is picked up with "no strings attached," eliminating separation, and there are no troublesome and time consuming connection-yarn ends to pluck. This is made possible through the incorporation of a cutter and binder mechanism that permits each of the seven yarns being knitted to be held separately and cut automatically. An appreciable amount of yarn is saved.

A greatly expanded range of unusually sharp, clear, inlaid solid color patterns has been made possible through the development of a simpli-

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won't save your money

How hundreds of other textile plants save real money on waste hot water *won't save you a penny* unless you know about and use their methods.

That's why **p-k** is anxious that you investigate how heat reclaimers can extract otherwise wasted heat from your waste wash water and put it back to work again. Taking ready heat from waste water and using it to pre-heat cold water can save as much as fifty per cent of your fuel bill.

Right in your own plant you are wasting this useful heat if you are not reclaiming it. Before you throw away another gallon of waste hot water why not get more information from **p-k**? It won't cost you anything for this information. Once you decide there is something in it for you, **p-k** will gladly supply engineering assistance to put this reclaiming equipment to work saving you money. Write today for Catalog 310.

the **Patterson-Kelley Co.,** inc.

1160 Wilson Avenue, East Stroudsburg, Penn.

1990T

101 Park Avenue, New York 17 • Railway Exchange Building, Chicago 4 • 1700 Walnut Street, Philadelphia 3 • 96-A Huntington Avenue, Boston 16 • and other principal cities.

fied individual needle control system. The control of each needle is positive and constant in either upward or downward motion. This is accomplished by using 20-step jacks, of which any given step is controllable.

The jack pattern control mechanism is arranged in two banks, both being activated from the same drum. This arrangement allows needles to be raised out of action on one bank while simultaneously lowering them into action on the other.

The knitting cylinder can be indexed 90 or 180 degrees as desired, to permit intricate patterning on any quarter of the hosiery body. A 96-move control drum, employing an automatic shogging device, increases its own patterning scope to 192 moves.

The machine also features a three-pulley, two-speed automatic shift, independent clutching, and elastic top and reinforced heel and toe knitting mechanisms.

Current production sizes are 4" 84-needle, 12 gauge; 4" 108-needle, 12 gauge; 4" 160-needle, 36-gauge.

Hemphill Co., Pawtucket, R. I.

For additional data, request item F-108, using Handy Return Card on page 204.

Fluid Type Drive Unit for Fabric Winding at Uniform Tension

The newly designed Twin Disc "Hydro-Wynd" Drive is now available in Models 12.2 and 8.4, and offers increased capacity (in the 12.2) with new features — including rearrangement of the gear train, better bearing spacing, and a new carbon-against-Meehanite spring-loaded seal — for higher capacity, greater strength, and greatly increased life.

Designed to automatically maintain predetermined tension without intermittent adjustment, the drive has proved its ability to solve the problem of breakage and other quality-impairing difficulties, during winding and tensioning operations. By incorporating a fluid coupling on the input end with a planetary gear set on the output end, the unit "masterminds" the operation through automatic "slip" of the coupling reacting with the planetary gears — automatically adjusting itself to meet the varying speed and torque relation-

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Humidity Controls

For new or existing systems

- Installed in leading plants throughout the nation for humidifying or dehumidifying
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- Full complement of associated controls—thermostats, humidistats, control motors, motor-operated valves, program switches.

- Housed in trim, modern steel cabinet, ready to install.

ASK for Bulletin No. F-5173 ... for complete specifications and application data.

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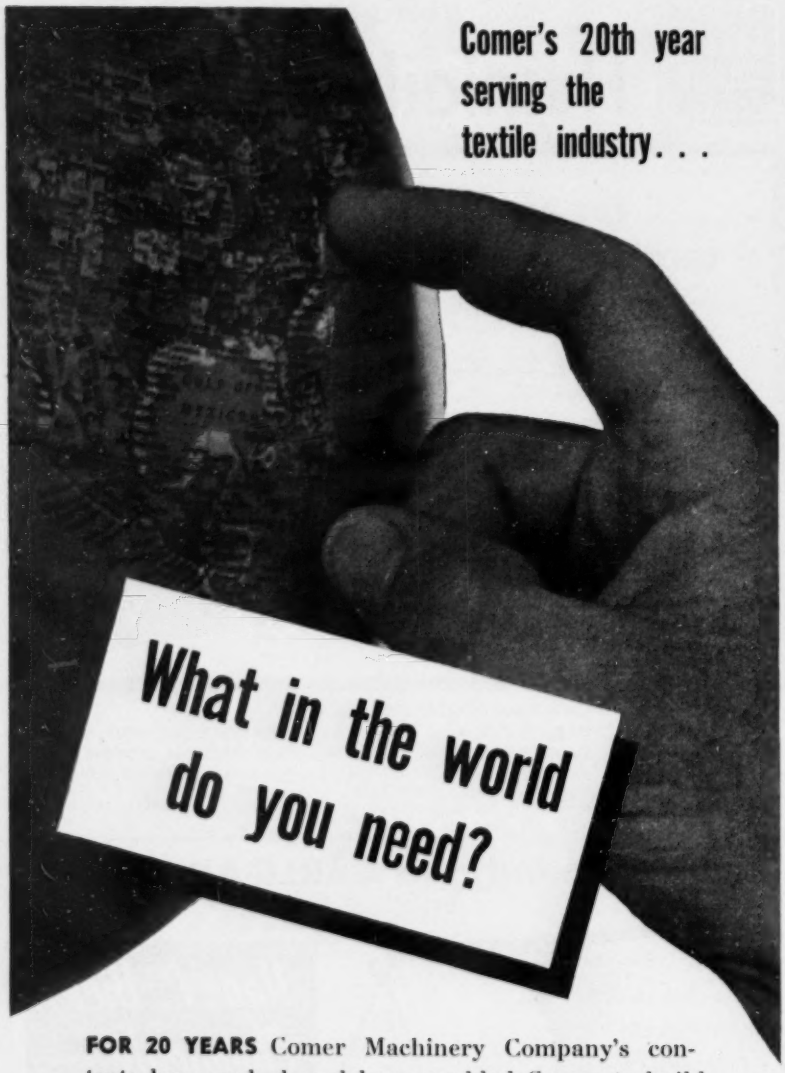
* Reg. trademark of Hans C. Bick, Inc.



FOR 20 YEARS Comer Machinery Company's contacts here and abroad have enabled Comer to build up an amazing service record to textile mills purchasing and selling machinery. Whether you're buying or selling, contact Comer Machinery Company *now*. A single piece, or complete mill properties bought and sold. Liquidations. Appraisals. Cable address: COMACH

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LET'S GO SEE WHAT'S NEW IN ATHENS . . . . . .

NEW Equipment AND MATERIALS

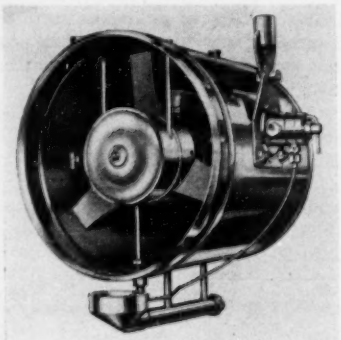
ships as the roll-speed and diameter vary.

Twin Disc Clutch Co., Dept. DS, Racine, Wis.

For additional data, request item F-604, using Handy Return Card on page 204.

Unit Humidifier Features High Capacity, Low Operating and Maintenance Costs

The Amco Model 35 Humidifier is suited to furnish humidification in small or large areas of light heat concentration, such as storage areas, laboratories, and miscellaneous localized applications where the cost of other types of humidification might



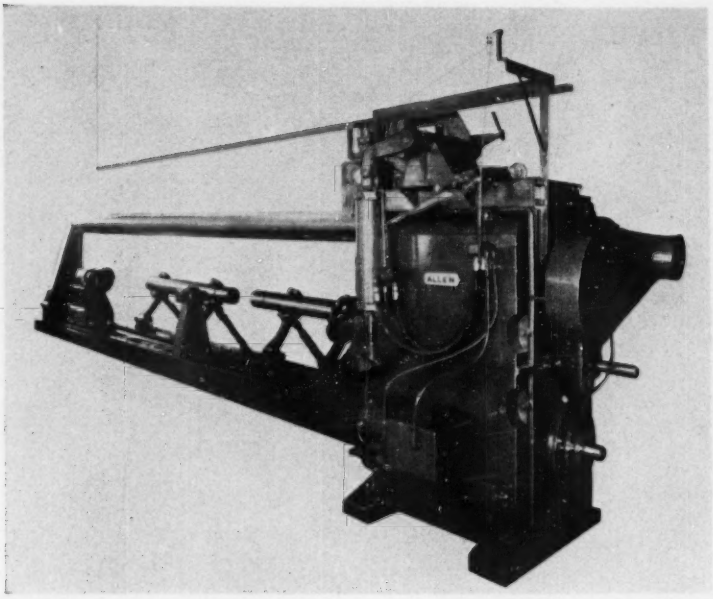
be prohibitive, or to provide additional humidification where a system is already installed. It can be adjusted to evaporate from zero to 22 pounds of water per hour while circulating 1200 cu ft per minute of air.

When operating, a propeller type fan draws room air into the rear of the unit and forces it forward around the periphery of an atomizing disc which rotates at high speed. Airstream from the fan carries the atomized water into the room where it quickly evaporates in the surrounding atmosphere.

The unit requires only simple water and electrical connections. One motor drives both fan and disc. Operating cost is minimized. Simplicity of construction and smooth surfaces of unit assure minimum of maintenance.

American Moistening Co., 260 West Exchange St., Providence 1, R. I.

For additional data, request item F-116, using Handy Return Card on page 204.



Heavy Duty Beamer Accommodates One, Two or More Loom Beams

A new heavy duty beamer, designated as Model H-3, accommodates 1, 2 or more loom beams at the same time, taking loom beams with traverse widths up to 21′ between heads, or greater; and with heads up to 44" diameter, or greater as required.

The Model H-3 is furnished in three different classified units: 10 hp, 15 hp, and 25 hp. These machines are excellent for beaming carpet and all heavy run yarns on both the woolen and worsted systems, and are applicable on the cotton system as a dry-slashing head for beaming cotton, duck, jute, paper or glass yarns.

An exclusive feature is the hydraulic compressor unit (patent pending) which not only maintains uniform yarn density but also substantially increases the amount of yarn that can be warped on a beam. This increase in the amount of yarn carried per beam naturally lowers drawing-in and weaving costs.

Changes in beam barrel lengths and traverse widths are easily accomplished on the new beamer because the outboard drive can be repositioned in a matter of seconds. Additional lengths can be added to the presser roll, or it can be shortened by removal of lengths, with practically no down time.

Full length starting and stopping control rod, or conveniently located start-stop push buttons are furnished. Standard equipment includes a yardage counter, tension rolls, and a heavy duty Allen XX positive expansion comb.

Features other than those already mentioned include: double-end drive; adjustable center stands; constant yarn speed hydraulically controlled; electric brake; heavy duty clutch giving gradual acceleration; beams loaded and doffed without moving outboard drive; hydraulic loading and doffing available.

Allen Warper Co., 40-44 Church St., Lowell, Mass.

For additional data, request item F-104, using Handy Return Card on page 204.

Self-Cleaning Filling Grate for Looms with Side Filling Fork

A United States patent for a new self-cleaning filling grate for looms has been issued to Deering Milliken Research Trust, Pendleton, S. C. The patent, No. 2,672,895, covers a filling grate having a special surface finish and adapted for looms having the side filling fork.

The grate surface is composed of polytetrafluoroethylene or polytrifluorochloroethylene, and it has been found that lint, size particles, grease, dirt, and moisture cannot adhere to this surface.

Using the new grates, mills have

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Here, in one of the world's largest warehouses of used textile supplies, you can find what you need—supplies, equipment or machinery. Whether you want to buy a single piece, or a complete mill section, chances are you'll find just what you need among the carefully catalogued pieces. Let Southern know your needs, or come visit the warehouse. Become familiar with the supplies, equipment and machinery available for quick delivery.

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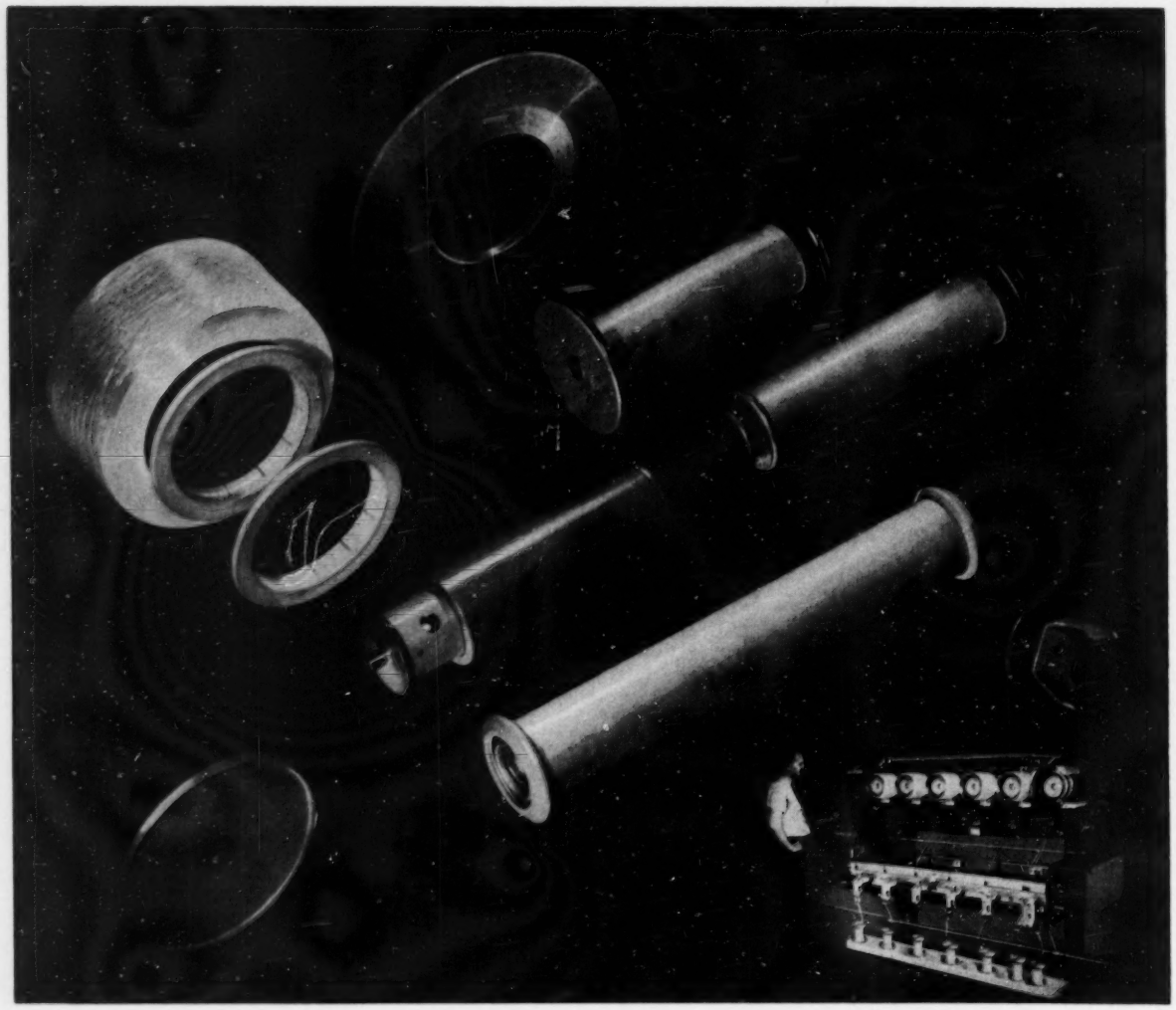


How a Tough Plastic helps make Fine Fabrics

● *Synthane* laminated plastics are naturals for the textile industry. Bobbins, textile rollers, redraw caps, headless package tubes and many other essential products are made from *Synthane*.

The reason is simple: *Synthane* has the right combination of properties.

Synthane is hard, dense and super-smooth; it won't snag fine yarns. It is strong and tough. It is machinable to close tolerances and dimensionally stable. It's light weight, only about half that of aluminum, helps bobbins to start and stop quickly and easily.

Add these properties together and you will see why *Synthane* is used so extensively in textile production. Pirns, Dacron redraw caps, hosiery turning and examining forms, and sizing bobbins are all made of *Synthane*. Nylon sizing machines use *Synthane* piping because *Synthane* is highly resistant to polyvinyl alcohol and other commercial sizes.

The *Synthane* textile catalog is full of interesting and money-saving information. Drop us a request and we'll be glad to send your copy by return mail. Write us at 9 River Road, Oaks, Pennsylvania.

SYNTHANE CORPORATION, OAKS, PA.
Textile Division

Our 25th Year

SYNTHANE
LAMINATED S PLASTICS

NEW Equipment AND MATERIALS

found it possible to cut cleaning schedules down to one-third or less of their previous rate, and in many cases the routine blowing off of the loom with an air hose is sufficient to keep the grates lint-free.

The resulting large savings in direct labor costs are calculated to return the cost of the grates several times in the course of a year, and these savings do not include further savings from increased loom efficiencies and from improved quality. Higher loom efficiencies are realized due to reduced down time for brushing, and better quality is obtained through eliminating the lint frequently brushed from the grates into the cloth in conventional practice, as well as the thin places which occur when the grates get clogged before the cleaner gets to them.

Deering Milliken Research Trust, Pendleton, S. C.

For additional data, request item F-110, using Handy Return Card on page 204.

Permeometer Measures Very Porous Materials When Densometer Fails

A new model Permeometer for measuring the porosity or air permeability of materials too porous to be tested accurately or conveniently with a densometer is now available.

The Permeometer measures air flow from less than one to about 400 cubic feet of air per minute, per square foot, at a pressure drop equal to 0.5 inches of water.

The instrument has many uses in textile testing: It tests cloth in which the ability to pass air is a use-requirement, such as parachutes and vacuum cleaner bag materials. It evaluates cloth used as a filter; selects clothing materials for coolness or warmth; predicts the penetration into cloth of various coatings. The Permeometer also measures the retention of fillers, starch or sizing after laundering or cleaning; predicts the water-resistance properties of fabrics; and measures the compactness, nap or other properties of cloth after fulling, washing, sizing, and other treatments.

Tests can be made very rapidly, routine tests in less than 15 seconds. The Gurley Permeometer is portable, requires no special skills to operate. The motor operates on direct current, or alternating current from 25 to 60 cycles, 115 volts.

W. & L. E. Gurley, Troy, N. Y.

For additional data, request item F-605, using Handy Return Card on page 204.

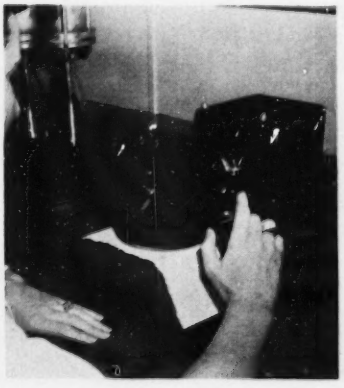
Synthetic Detergent Gives Excellent Results on Wool Fibers, Fabrics

An all-purpose synthetic detergent with excellent scouring properties, called Nopco 1479-A, is a low cost, 100% active detergent made from vegetable and animal oils and fats.

Packaged in 55-gallon steel drums, it is a liquid fatty alkylolamide condensate exhibiting superb cleansing properties. The detergent has a heavy body consistency, and high foaming action. Reports from field tests already indicate that Nopco 1479-A is having outstanding success on wool—either fibers or fabrics. Since Nopco 1479-A contains no water or inert material, its shipping costs are kept to a minimum.

Nopco Chemical Co., Harrison, N. J.

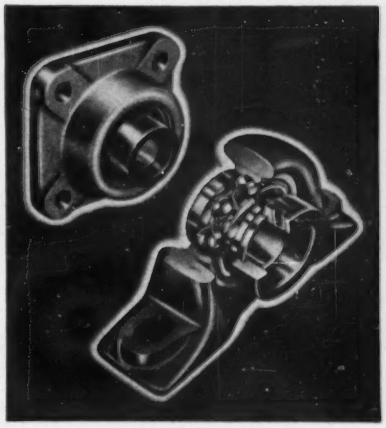
For additional data, request item F-101, using Handy Return Card on page 204.



Fabric Dyeing Cycle Less Than 4 Hours with This Machine

The Fleet Line Barotor is Riggs & Lombard's version of the pressurized fabric-dyeing machine developed by Du Pont.

The Barotor is a horizontal cylinder-shaped autoclave. The fabric to be dyed is mounted in open width on a rotor, in tensionless condition. Samples for shade matching can be taken at any time during the dyeing cycle



Just how important are pre-lubricated bearings?

When it comes to Textile Mill operation, we would say pretty darned important. How many bearing units in your mill are lubricated by the time and money-wasting hand method and how many hours of machine down-time are incurred? In other words how much does it cost you to lubricate one bearing a year? Were you sure that every bearing was located, contacted and received the right amount and right kind of lubricant? Are you plagued with the constant danger of lubricant dripping onto goods in process? Does cotton lint, dust and dirt materially affect bearing life in your mill?

You never have to worry about these troubles if you install Wood's Life-Lube Bearings. You never have to lubricate them because they're sent to you *permanently lubricated for life* (with the correct amount and right type of lubricant). A Neoprene seal bonded to a steel core seals lubricant in. There's no grease fittings to catch oil-thirsty lint and dirt. And, there's no danger of leakage, either.

For specific information and product application send for Bulletin 194 and the name of your nearest Wood's Distributor.

T. B. Wood's SONS COMPANY

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TEXTILE INDUSTRIES' NEW

"Dyeing, Bleaching and Finishing Manual"

Your copy of this outstanding compilation of essential facts has been carefully prepared by TEXTILE INDUSTRIES editors to provide you and other mill men with up-to-the-minute specialized information on the most important phases of wet processing.

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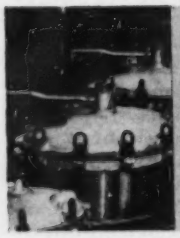
Here is your chance to get for yourself 24 full issues of TEXTILE INDUSTRIES *plus* the new "Dyeing, Bleaching and Finishing Manual" at a very special price.

Month after month you will congratulate yourself that you took advantage of this marvelous offer. No other magazine in the industry brings its readers a more worth-while combination of news and information on America's second largest industry.

TEXTILE INDUSTRIES

806 Peachtree St., N. E.
Atlanta 5, Georgia

dyeing equipment has changed



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Pfister Chemical Works INC Bridgefield, New Jersey

PFISTER FOR FINE NAPHTHOLS

MACHINE SEWING THREADS

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HIGH SPEED
HIGH TENSILE
KNOTLESS

PEDIGREE

Top quality, knotless, high speed, rated by constant users as equal to or better than many combed threads. Particularly adaptable for high speed bag closing and multi-wall bag manufacturing.

ALSO MANUFACTURERS OF TIRE FABRICS · HOSE AND BELT DUCK · LAUNDRY TEXTILES · YARNS · LAMINATING FABRICS AND SPECIALTIES

ATLAS

Medium Grade Knotless Thread for high speed bag closing.

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NEW YORK OFFICE: 40 WORTH ST.

CHAMPION

Medium Grade Knotless Thread for Cotton and Burlap Bag manufacturing.

without interrupting operation.

Dyeing cycles of less than 4 hours, including time for loading and unloading, can be achieved with commercial size batches of fabric. Experimental batches have been dyed in 3 hours, without using a carrier, as against 10 hours for dyeing the same fabric in a jig using a carrier. In Barotor dyeing, carriers are usually not necessary.

Quality, levelness, and fastness of Barotor-dyed cloth of all fibers are superior. Full ranges of shades, including dark shades with superior fastness, are practicable even with the newer man-made fibers.

Riggs & Lombard, Inc., Foot of Suffolk St., Lowell, Mass.

For additional data, request item F-113, using Handy Return Card on page 204.

Ladies' Seamless Hosiery Knitter

Type "E" is the designation of a ladies' seamless hosiery knitting machine which Morris Speizman Co. is rebuilding into 3½" diameter, 370 needles, 25-step spiral unit, set up with all the usual attachments such as gusset toe, "Y" heel, etc.

The machine can be set up by the mill on micromesh or plain, as desired.

Morris Speizman Co., Inc., 508-514 West Fifth St., Charlotte 1, N. C.

For additional data, request item F-114, using Handy Return Card on page 204.

Humidity Control Has "Change-Anticipating" Mechanism

Increased sensitivity and a unique "change-anticipating" mechanism are principal advantages of the new Amco Cyclestat humidity control. Atomizers in the area are started and stopped by the joint operation of two highly responsive humidity-sensing membranes. An "on-off" pneumatic, electrical cycle control is readily adjustable to the closest practical limits.

The jewelled mechanism anticipates both the normal and unusual conditions that call for more or less

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Spinning rooms using Anderson Shields save time and money, and prevent disruption when unnecessary breaking, chipping, and splitting of bobbins and spools is avoided. In a year's time these items alone can amount to a surprising sum . . . Insist on Anderson and get the best protection metal shields afford . . . Watch your spinning room efficiency increase!

TEXTILE SHIELD CO., INC.

Metal Protection for Wood Turnings

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LAWRENCE, MASS., U.S.A.

New Laurel Antistatic Agents—
REGENT CONING OIL—
SPINOL RL
give excellent control and lubrication

REGENT CONING OIL—
for Orlon, Dacron, Acrilan, Nylon, and other synthetic filament or spun yarns. Improves uniformity and knitting properties. Also softening agent for after processing.

SPINOL RL—
for Orlon and Dacron fibers and blends. Ideal as stock lubricant prior to spinning and as yarn lubricant before knitting. No adverse effect in dye bath or on shades.

Both Regent Coning Oil and Spinol RL may be used as received or in emulsion. May be readily removed in regular scouring operation. Send for working samples and information today.

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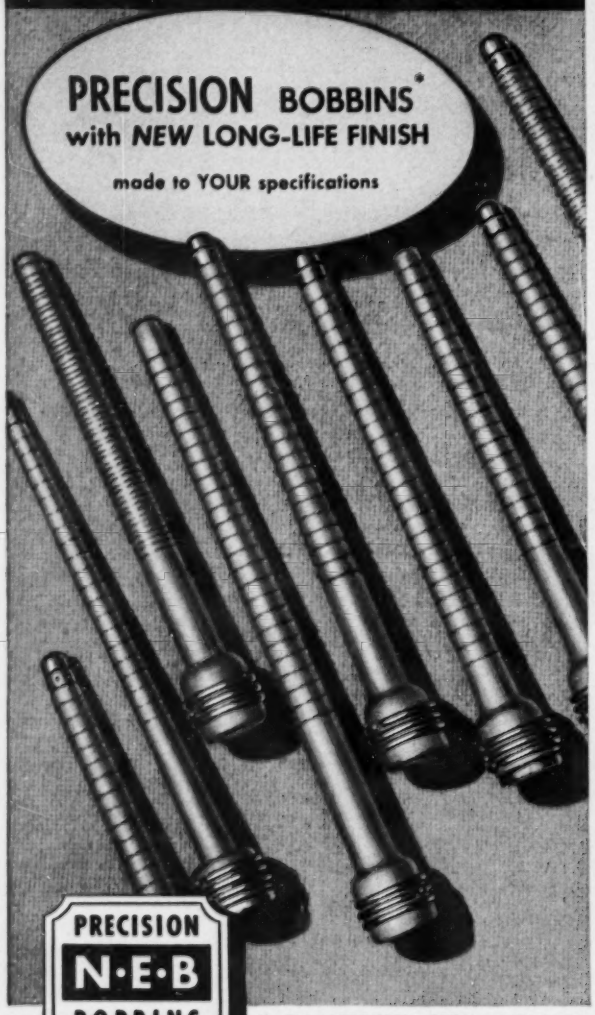
Precisioned for YOUR Spindles . . .

For COTTON and SPUN RAYON



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Every NEW ENGLAND BOBBIN is tested for concentricity; for smooth, vibrationless running at high speed; to reduce spindle wear. The smooth New LONG-LIFE Finish developed by New England Bobbin & Shuttle Co. withstands heat up to 125°, chemicals in detergents, hard and continuous use. Lasts longer than conventional finishes. Include NEBs in your next requisition — your next order — and compare!

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The new Fielden Electronic Temperature Control is a simplified, low cost instrument with high sensitivity—an ideal controller in many industrial fields. This control can be employed for numerous tanks, vats, ovens, kilns, or dryers, in conjunction with electric, steam, or hot water heaters using solenoid, pneumatic, or electric motorized valves. Available in a wide selection of ranges, with either platinum or nickel bulbs. Aside from the many industrial uses, this control has proved very successful in the laboratory for low cost, reliable and accurate control of test chambers, water baths, and similar applications. Write today for complete information.

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moisture, to hold the relative humidity constant.

Operating mechanism is enclosed in tight, dust excluding case. In event of electric power failure, the control "fails safe" with humidifying equipment shut off.

American Moistening Co., 260 West Exchange St., Providence 1, R. I.

For additional data, request item F-117, using Handy Return Card on page 204.

New Books

The sixth edition of *Matthews' Textile Fibers — their physical, microscopic, and chemical properties,* was recently published by John Wiley & Sons, Inc., 440 Fourth Ave., New York 16, N. Y. (price, $16.50). It treats all the fibers of animal, plant, mineral, and synthetic origin from the point of view of their detailed physical, chemical, and related properties. A chapter on X-ray diagrams of all natural and synthetic fibers has been added; number of flow sheets has been increased; section on microbiology has been completely rewritten; section on static electricity of the new man-made fibers has been revised.

Proceedings of the Third Annual Wool Seminar can be obtained from the National Association of Wool Manufacturers, 386 Fourth Ave., New York 16, N. Y. (price, $7.50). Contents are divided into five sections classified as follows: General Information, R. C. Oberdahn; Picking and Carding, A. W. Reynolds; Spinning and Twisting, Harry Moss; Weaving, W. C. Howe; Dyeing and Finishing, Elmer J. Glaeser. 368 pages, paper bound.

A group of six papers on *Soaps and Detergents* are published in one handy booklet by American Society for Testing Materials, 1916 Race St., Philadelphia 3, Pa. (price, $.75): Analysis of Hard Water Soap; Detergents in Drycleaning; Effects of Detergents on Sewage Treatment Processes are titles of three of them.

Yearbook of the Textile Institute, No. 6, 1953-54, is available from the Textile Institute, 10 Blackfriars St., Manchester 3, England. Includes list of Institute committees, information concerning Institute awards and lectures, particulars of scholarships awarded by the Institute and of conferences and competitions that take place under its auspices. Other sections give sources from which films on textile subjects can be obtained, and addresses of research organizations, etc.

Want More Information on These Items?

An **aluminum compound,** known as Metalset (A 101), can be used for repairing castings, filling joints in sheet metal, and building-up surfaces of patterns, molds, and dies. Can be applied in any thickness without cracking and with negligible shrinkage. Hard, tough, machinable; has excellent chemical stability.

Smooth-On Mfg. Co., 572 Communipaw Ave., Jersey City, N. J. (F-201).

The level of all electrically conductive liquids can be accurately controlled with the electronically operated **level control** Type 13DJ3. Annual tube replacement is only maintenance required. Can be located at distances up to 100 feet from probe installation.

Photoswitch, Inc., 77 Broadway, Cambridge 42, Mass. (F-202).

The Monoflo **conveyor for handling light loads** along path which can incorporate both horizontal and vertical bends, consists of a flexible steel screw approximately ¾" in diameter which turns in a metal retaining rail, the top of which is open

NEW Equipment AND MATERIALS

to permit exposure of the screw. When a load carrying hook is placed on the rail, the thread of the screw immediately engages the hook and propels it along the rail. Loads can be placed on the conveyor and removed from it at any point along its path. Standard components, available for immediate delivery, can be quickly assembled to fit any requirement. Brackets and fittings to suit any building requirements are also available from stock. Easily installed by plant personnel.

M-H Standard Co., 515 Communipaw Ave., Jersey City, N. J. (F-203).

Designed for low headroom areas found on truck trailers and box cars is a new **electric fork truck** known as the Lo-Head. It gives operator protection against low overhead clearance objects, at the same time retaining the shortest possible overall length and turning radius. 48" lift. Available in capacities of 2000, 3000, and 4000 lb.

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Glacial or standard strength solutions of 80% - 84% shipped promptly in aluminum tank cars or drums. . . . .

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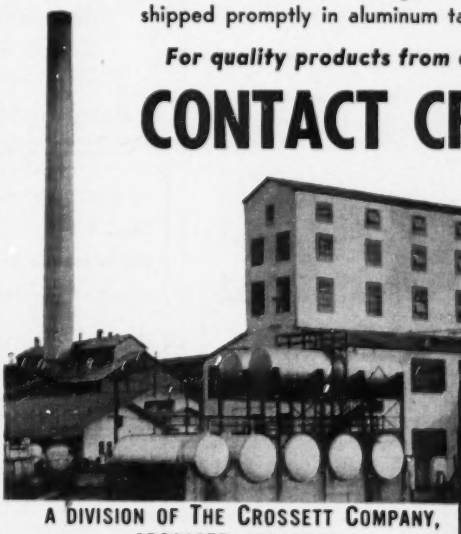


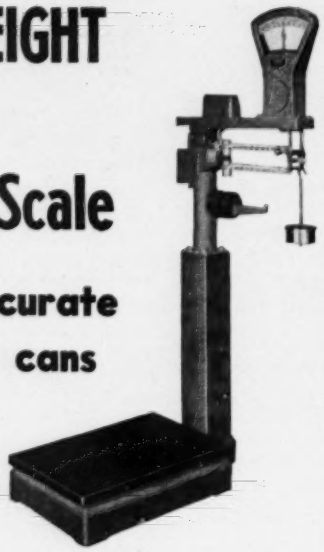
A partial view of the Crossett Chemical Plant, Crossett, Ark.

A DIVISION OF THE CROSSETT COMPANY, CROSSETT, ARKANSAS

CROSSETT CHEMICAL COMPANY

EXACT WEIGHT Portable Platform Scale

for fast, accurate weighing of cans of yarn



An adjustable hydraulic damping mechanism brings indicator to rest quickly—and visible fractional-ounce indication makes possible an accurate reading at a glance. Designed for floor or low-bench use with dial 45 inches above platform. Indicator travel is 2½ inches over and 2½ inches under, representing one pound over and under by one-ounce graduations for first eight ounces and two-ounce graduations for next four ounces. Sturdily constructed to withstand continuous use. Capacity, 300 pounds. Send coupon for complete details.

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only TRICO can make this claim

NO OTHER RENEWABLE FUSE Can Give Your Circuits the Same Complete PROTECTION

Because only . . . TRICO Provides a CUSTOM-BUILT *"Powder-Packed"* Renewal Element THAT MAKES THE *Difference*

"Powder-Packing" Protects link against bending twisting, fractures. Gives support against sagging, stretching, thinning out . . . RESULT: Less fuse blowings.

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"Powder-Packing" Acts as heat insulator, absorbs heat, Provides effective barrier or baffle. RESULT: TRICO fuses operate cooler, GIVE THREE TIMES THE SERVICE.

"Powder-Packing" **Prevents tampering, link interchanging. Only TRICO element can be inserted. RESULT: No doubling-up dangers . . . no mistakes . . . no needless motor burnouts.**

Speed Up Fuse Replacement with TRICO **FUSE PULLERS**

Prevent shock, burns, serious infection, compensation costs. Also handy for adjusting switch and fuse clips.

WRITE FOR BULLETIN NO. 5

SEND FOR BOOKLET 206-A

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. . . runs virtually without stripping. Saves time, money, and labor. Produces better quality.

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***STRIP-O-MATIC* AND CONVENTIONAL**

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NEW Equipment AND MATERIALS

Truck Div., 4609 D. Western Blvd., Chicago 9, Ill. (F-204).

A new line of **self-locking machine screw nuts** eliminates lock washers, is double chamfered and counter sunk, and may be assembled either side up for automatic hopper assembly. Manufactured in one piece—all metal, these Stop-Nuts are immune to effects of oil and water, maintain locking action after repeated use, and will lock in any position on the thread.

Jacobson Mfg. Co., Inc., Kenilworth 9, N. J. (F-205).

For determining the direction of rotation of electric motors before they are connected to the line and for determining the phase rotation or sequence of energized power circuits is the Biddle **motor rotation and phase tester.** Also, it can determine the polarity of power and instrument transformers, and can be used as a continuity tester in checking electrical circuits. Eliminates need for temporary connections.

James G. Biddle Co., 1316 Arch St., Philadelphia 7, Pa. (F-206).

Air-flow drying tunnel kits incorporating Chromalox electric far-infrared heaters offer quick, low cost assembly of far infrared tunnels for **improved screen process drying.** Other advantages: rapid, controlled drying, saving of floor space, and reduction of production costs.

Edwin L. Wiegand Co., 7500 Thomas Blvd., Pittsburgh 8, Pa. (F-208).

Two new colors have been added to the range of "Coloray" **solution-dyed rayon staple fiber** — slate gray and turquoise. Both are available in 1½ denier 1 9/16" and 3 denier 2".

Courtaulds, Inc., 600 Fifth Ave., New York 20, N. Y. (F-209).

Designed to produce cut-offs with positive, easy action is a new Toledo **heavy duty pipe cutter** of the wheel and roller type. Capacity ⅛" to 2" pipe. Hooks on pipe easily, tracks perfectly, warp-proof, leaves practically no burr.

Toledo Pipe Threading Machine Co., Toledo, Ohio. (F-210).

A **staple form of Lurex,** the nontarnishing metallic yarn, is now being produced, in lengths of from 1¾ to 3 inches. When blended with other fibers, both natural and synthetic, and spun and then woven with other yarns, it creates an endless number of random effects entirely different from those obtained with regular flat supported metallic yarns.

The Dobeckmun Co., 250 West 57th St., New York 19, N. Y. (F-504).

For kier boiling, bleaching, scouring rayon and wool fabrics, and level dyeing, Triton AS-35 is recommended. A new **fatty alcohol sulfate** in 30% paste form, it is characterized by high foam, good wetting and detergency, and excellent level dyeing properties. Has high stability to hard water, and is stable to dilute acid and alkali.

Rohm & Haas Co., Washington Square, Philadelphia 5, Pa. (F-503).

Navy blue shades with good all-round fastness properties can be produced **on filament and spun nylon yarns** with Erio Navy Blue M, a new dyestuff which should be applied in a neutral bath without dyeing assistants. It draws rapidly without these assistants and good exhaustion is obtained.

Geigy Dyestuffs Div. of Geigy Chemical Corp., 89 Barclay St., New York 8, N. Y. (F-502).

Housing of the "Flash-O-Lens" **illuminated magnifier** for all types of inspection work has been redesigned. A new type of thumb-nail-notch grip facilitates loosening and tightening of the ring that holds the lenses in the housing. Long service life can be expected from the new housing since it is now being molded of durable, heat-resistant polystyrene.

E. W. Pike & Co., Inc., 492 North Ave., Elizabeth, N. J. (F-501).

The Rigid **portable power drive** for threading, cutting, and reaming pipe with hand tools is now made with a new wrenchless Speed-Grip chuck. Guaranteed to hold any kind of pipe or rod securely both forward and reverse.

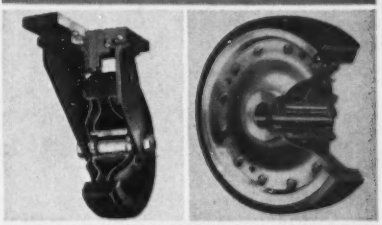
The Ridge Tool Co., Elyria, Ohio (F-214).

Ball bearing pillow blocks with pressed steel housings, designed for applications where speeds are relatively low and loads are light, cost less yet give all the advantages of precision anti-friction bearing performance.

Link-Belt Co., 307 N. Michigan Ave., Chicago 1, Ill. (F-215).

A **shock-absorbing bumper** of neoprene synthetic rubber offers a practical, low-cost solution to the prob-

THE RIGHT CASTERS AND WHEELS FOR TEXTILE MILLS



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CASTERS & WHEELS

Darnell Engineers have given special study to Caster and Wheel usage in Textile Mills - have developed many models of casters and wheels to meet the demands of efficient, economical intra-plant movement of materials. It will pay you to consult a Darnell distributor when considering casters and wheels, either for new equipment or replacement.

OVER 4000 TYPES OF CASTERS & WHEELS FOR EVERY USE!

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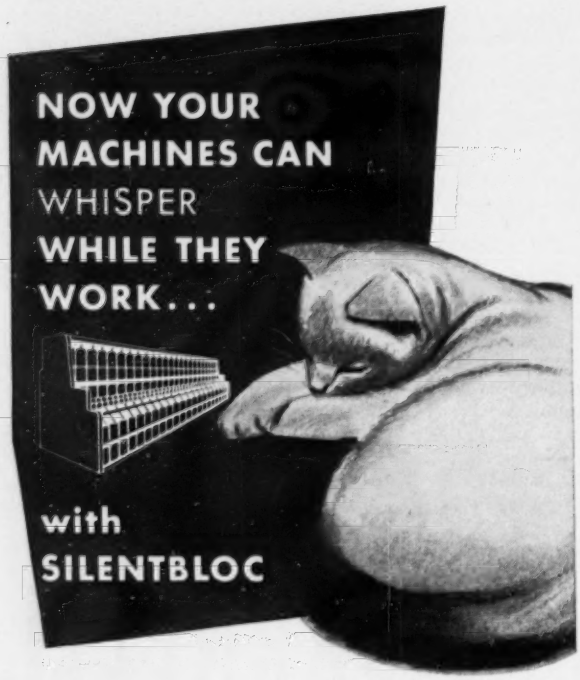
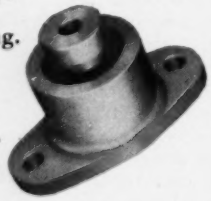


Silentbloc rolling joint mountings offer a proven way to reduce damaging vibration in textile machinery. In these unique mountings, rubber completely insulates the inner metal member from the outer bolting flange so that the machine bolted to the inner member actually floats on rubber.

Installation is simple too . . . it is necessary to raise the machinery approximately 2½", locate the mountings, and provide three bolts for installation. If needed, adaptors can be provided to adjust the final height of the mounting.

For immediate attention to your vibration problems send us the facts on your company letterhead . . . for more information fill out the coupon below.



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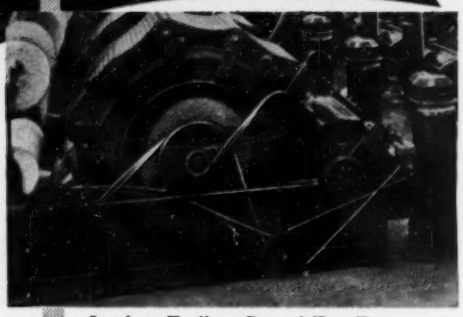
TON-TEX
COTTON CARD BELTS



Lapless Endless Round Ton-Tex — a new solution to Card Band problems. A HIT wherever installed.

Vibrationless, with little stretch and no slippage. For cylinder, vibrator, and grinder drives — no wear or effect on operation due to crossing. Complete stock of all popular sizes.

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Solve all your textile brush problems by one stroke with the complete service we render for all mill operations. Gastonia Brushes are always dependable.

LOOM DUSTER
Solid back construction,

Five inch brush—hair—staple set, trimmed 2&3/4". Workmanship and Materials Guaranteed. Request Catalogue.

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GASTONIA, N. C.

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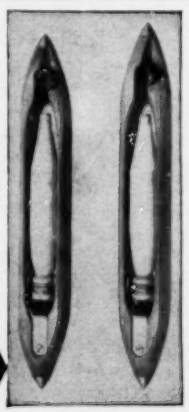

. . . Watson-Williams' newest additions—shuttles for Draper Looms, fitted with Cast Iron Eyes, to accommodate a longer filling package. Left—15¼" long. Right—15¾" long.

WATSON-WILLIAMS Mfg. Co.
MILLBURY, MASSACHUSETTS

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Watson & Desmond, Box 1934, Charlotte, N. C.
Arthur J. Bahon, P. O. Drawer 779, Greenville, S. C.
John Wyatt, P. O. Box 701, Greensboro, N. C.

NORTHERN REPRESENTATIVES:
Guy C. Burbank, 32 Beaconsfield Rd., Worcester 2, Mass.
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NEW Equipment AND MATERIALS

lem of damaged wood boards on truck loading platforms. Mounted in continuous strips along the dock, it eliminates scraping and gouging, and prevents cracking from all but most severe collisions. Resembles half-round moulding on a wide, flat base

The Everguard Co., P. O. Box 143, Newport Beach, Calif. (F-211).

For use where a cushioning effect is required is **Neoplastic covering on conveyor rollers** of all standard sizes and shapes. Rollers can be furnished in any length straight face, also on concave and tapered types. Neoplastic covered wheels for wheel conveyor in all standard sizes are also available. In addition, the covering can be applied to other parts such as trolley conveyor carriers, apron conveyor slats, and special power conveyors.

Logan Co., Louisville, Ky. (F-212).

Extension of the "off-the-shelf" line of **Taper-Lock sprockets** to include the 1½", 1¾", and 2" pitch sheaves means that users of single strand roller chain will now be able to secure sprockets and bushings for chain sizes from 40 through 160 direct from distributors' shelves ready for immediate installation without delay for reboring, keyseating, drilling, and tapping.

Dodge Mfg. Corp., Mishawaka, Ind. (F-213).

A compact **packaged boiler,** called the "CB," for processing or heating steam or hot water use offers big boiler performance never before available in small units of 15 to 40 hp capacity. Silent operation; burns light oils without difficulties; electronic combustion safety control; maximum accessibility for operation and maintenance.

Cleaver-Brooks Co., 326 East Keefe Ave., Milwaukee, Wis. (F-216).

A new type of **infrared lamp** for scores of heating, drying, and other uses, comes in a compact, tubular shape, slightly larger in diameter than a cigarette, and is made of fused translucent quartz. Produces more than four times energy concentration delivered by a 250-watt infrared bulb. Withstands high temperatures and shock of violent temperature changes. Two sizes — 500 and 1000 watts, for use on 115-125 and 230-250 voltages respectively.

General Electric Co., Lamp Div., Nela Park, Cleveland 12, Ohio (F-217).

An **acid-proof pour-lay concrete,** known as Sauereisen No. 54, is resistant to all acids except hydrofluoric, water, steam, oil, solvents, electricity, and temperatures up to 2000 F. Recommended for floors, sewers, tanks, chimneys, pumps, lining, drains, vats, etc. Quick setting.

Sauereisen Cements Co., Pittsburgh, Pa. (F-218).

Gas and liquid flow regulation may be improved by use of a new, small, pneumatically-operated **control drive.** Butterfly valves, dampers, feeders, etc., may be operated on a straight line flow characteristic. Compact. May be installed in any position on a column, pipe or flat surface.

Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland 10, Ohio (F-219).

Three-coil overload protection can now be obtained with a new Cutler-Hamer starter. Adjustable heater coil offers four different ratings from a single coil by merely changing its position.

Cutler-Hamer, Inc., 315 North 12th St., Milwaukee, Wis. (F-220).

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SPECIALIZED ENGINEERING

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HASKELL-DAWES MACHINE CO., INC.

2231 E. ONTARIO ST.
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Stainless Steel CYLINDERS

...accurate...true running

Blickman Built Stainless Steel drying cylinder . . . 60 inch diameter. Plate No. 7252

Stainless Steel drying rolls . . . high pressure steam, built to A S M E code specifications.

FOR TROUBLE-FREE SERVICE UNDER MODERN HIGH SPEED TEXTILE OPERATIONS

For protecting the fabrics you process, Blickman Built cylinders are being recommended and used by an increasing number of manufacturers of textile finishing machinery. The reason is simple. Blickman specializes in the fabrication of stainless steel cylinders to give you a more accurate, more dependable, safer cylinder. Our special plant equipment and controlled welding procedures assure rugged construction for long service. Blickman Built cylinders are available through many textile machine builders or through us.

- **DIMENSIONS**—Built in any diameters or lengths to meet your requirements.
- **FINISH**—Polished on our own automatic machines to as high as number 6 finish, if you require it.
- **CODE REQUIREMENTS**—Cylinders built to conform to local and ASME national board codes.
- **INSPECTION**—Tested at twice working pressure . . . thoroughly checked for leaks.
- **CONSTRUCTION**—Mechanically sized for accuracy and true running. Furnished with or without heads.
- **TYPES**—Dry cans, presetting cylinders, cooling cylinders, etc.

Specify Blickman Built cylinders through your textile machine builder . . . or send your inquiry direct to us. Quotations furnished promptly.

EST 1889

S. BLICKMAN, INC. 206 GREGORY AVENUE WEEHAWKEN, N. J.

Manufacturers of stainless steel textile equipment, dye boxes, linings, cylinders, dry cans, rolls, hoods, tanks.

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HALLOWELL®

SOLID STEEL COLLARS

now size-marked for easy identification

Your HALLOWELL distributor now stocks these *size-marked* precision machined solid steel collars in sizes to fit shafts from 3/16" to 3" inclusive. And positive positioning of every HALLOWELL Collar is assured by the famous self-locking UNBRAKO Socket Set Screw—the screw that won't work loose. Write for literature and the name of your nearest HALLOWELL distributor. STANDARD PRESSED STEEL CO., Jenkintown 34, Pa.

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1% Accuracy for any range from 30 to 100 000 RPM or surface speed.
Antimagnetic durable mechanism
Efficient repair service at moderate charges.

IDEAL FOR MOTORS - SHAFTS - SPINDLES - LOOMS - TURBINES - FOR TEXTILE AND POWER PLANTS

WRITE FOR ILLUSTRATED FOLDER

GEORGE SCHERR CO., INC.
200-L LAFAYETTE ST. • N.Y. 12, N.Y.

What the TEXTILE MILLS are doing

(Continued from page 53)

cently sold to a group of local people, has been resold to George K. Fox, formerly president of the Prudential Worsted Co., Doylestown, Pa. The mill will be kept in operation under the name of **Prudential Fabrics Co.**

Real estate, machinery, and equipment of **D. Mackintosh & Sons Co.,** Holyoke, Mass., yarn and thread manufacturers, were recently sold at public auction.

North Carolina Finishing Co., Salisbury, N. C., was recently honored in a nation-wide safety award program for having completed a million consecutive man-hours without a single lost-time accident.

Pennwood Mills, Inc., has converted its entire plant in Blackwood, N. J., to a tricot operation.

Phoenix Sweater Mills, Philadelphia, Pa., are now producing a line of women's full-fashioned Orlon and full-fashioned cashmere sweaters. Nine colors are available in the Orlon sweaters, ten in the cashmere.

Pickens Manufacturing Co., Greenville, S. C., has plans for construction of a million dollar plant at Pickens, S. C., which will be a 50,000 sq ft one-story building totally enclosed and air conditioned.

Soule Mill, New Bedford, Mass., has discontinued the carding and spinning of spun rayon and concentrated production on the weaving of glass fabrics.

Susquehanna Mills, Inc., and **H & B American Machine Co.,** Chicago, have been merged, the new company to be known as **H & B American Machine Co., Inc.** Susquehanna will be operated as a separate division.

Textile Products Co., Inc., a subsidiary of Universal Braiding Mills, Inc., has moved from Worcester, Mass., to larger quarters at 103 West Main St., Millbury, Mass.

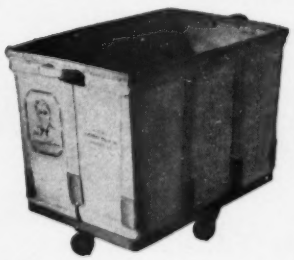
Textiles-Incorporated and **Threads-Incorporated,** through the Myers-Textiles Foundation, Inc., made a contribution last fall of $3,000 to purchase religious and character-building books for school libraries in Gastonia, N. C. A committee was appointed and to date 600 books have been placed in the school libraries, with more to come.

Textron Incorporated, as part of its diversification program, has acquired MB Manufacturing Co., New Haven, Conn. MB produces vibration equipment for military and civilian planes and ships.

Wyandotte Worsted Co., Waterville, Mass., has purchased Blackinton Mills, Inc., of Conestee, S. C. This will be Wyandotte's first southern operation.

COTTONBLOSSOM
BASKETS, TRUCKS & HAMPERS

ALL-STEEL FRAME is of high carbon, spring steel rods to absorb the heaviest impact . . . welded to rims at a single joint by means of a new process which is guaranteed to make the weld actually strong as the rod.



CANVAS is extra-heavy, durable cotton, smooth finished duck — woven on our own looms. It will not snag the softest fabric. Stitched with high breaking test cotton thread throughout. Unexcelled quality for long use.

Ask for Catalog No. 1053 showing 15 styles in capacities from 2 to 20 bushels.

SOUTHERN MILLS, INC.
585 WELLS STREET, S.W.
ATLANTA, GEORGIA

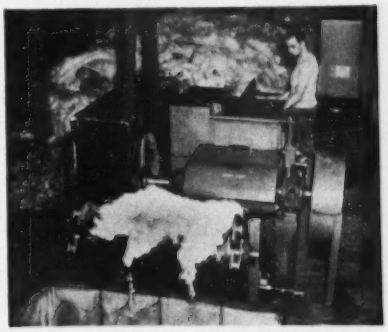
Maintain Your Motors

(Continued from page 155)

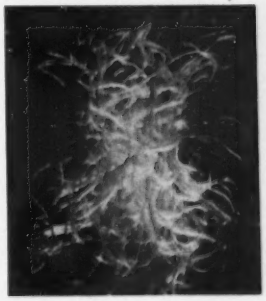
oiled bearings. We are able to set the oil level to be maintained at the time of installation and this will remain constant as long as oil is in sight in the cup. This makes it easy to observe whether or not oil needs to be added without a lot of wasted time.

Overhauling Motors. When the

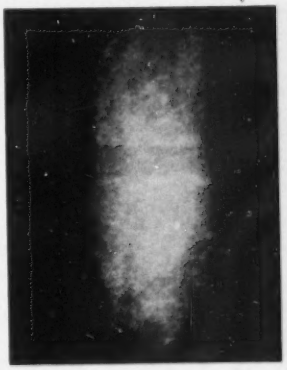
Cut...



THREAD WASTE LIKE THIS ▼



MAKE FIBRE LIKE THIS ▼



With a Taylor-Stiles thread waste cutter you can cut all kinds of tangled and mixed length thread waste, and after opening the cut yarn you will have a fine fibre for further processing.

Write for illustrated folder showing Taylor-Stiles thread waste cutters and describing the principles on which they operate.

TAYLOR-STILES & Company
204 Bridge Street Riegelsville, N. J.

Gives you all the data you need to select the finest canvas baskets, hampers and trucks for your mill or factory. The eleven styles most popular in the textile and garment industries are illustrated and described fully. The new catalog includes such outstanding items as the Style 67 Extra Heavy Duty Shipping Hamper shown below.

LOOK INTO STYLE 67

Extra Heavy Duty Shipping Hamper for Dependable Service at Low Cost.

BECAUSE:

- Hardwood bottoms — dual riveted — stronger than steel.
- Sturdy wood top with locking hasps — detachable or permanently hinged.
- Specially tanned binding leather prevents wear at all chafe spots.
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Just clip the coupon.

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Knitting and Warp

4's to 30's Single and Ply

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motor is brought to the shop for overhaul, it should first be blown out with air to remove as much dirt and lint as possible before being disassembled. The motor is then disassembled in the shop and the various parts are cleaned.

If there is an oily condition in the stator, it is first steamed with a detergent solution, then with clear steam until free of all the detergent. When it is necessary to steam clean the stator, it should be put into the oven immediately to start the drying process and should not be allowed to remain in a wet condition for any length of time, because while cooling after steam cleaning, the moisture will be taken into the coil insulation and will be very difficult to dry out.

If the stator is put into the drying oven immediately, the temperature will continue to rise, evaporating the moisture out of the windings without allowing the insulation to absorb any undue amount of moisture before drying.

After steam cleaning, the stator should be baked at a temperature of about 225 F to 235 F until insulation resistance becomes constant. This will usually take eight to twenty-four hours. When the stator is thoroughly dry, it should be taken out of the oven and allowed to cool to within approximately 25 F of room temperature, then dipped in varnish and allowed to stay until no further bubbling occurs.

All excess varnish should be allowed to drain from the stator before it is put back into the oven. The baking time on most insulating varnishes used for this purpose is approximately eight to ten hours at 235 F to 250 F. Of course, the time will vary according to the type drying oven and kind of varnish being used. The manufacturer's recommendations should be followed for the particular type of varnish being used.

After baking, the stator should be cleaned while it is still hot, as the varnish will come off of the metal surfaces easily if not allowed to cool and set up hard before starting this work.

The rotor should be checked with a growler to determine if any of the bars are open. If any of the

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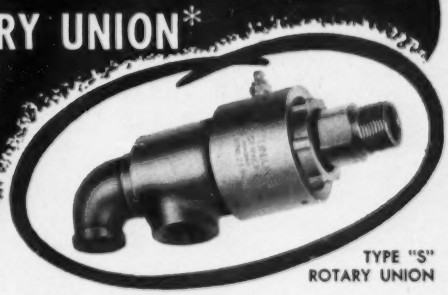

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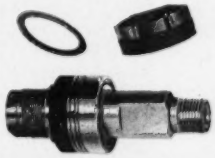

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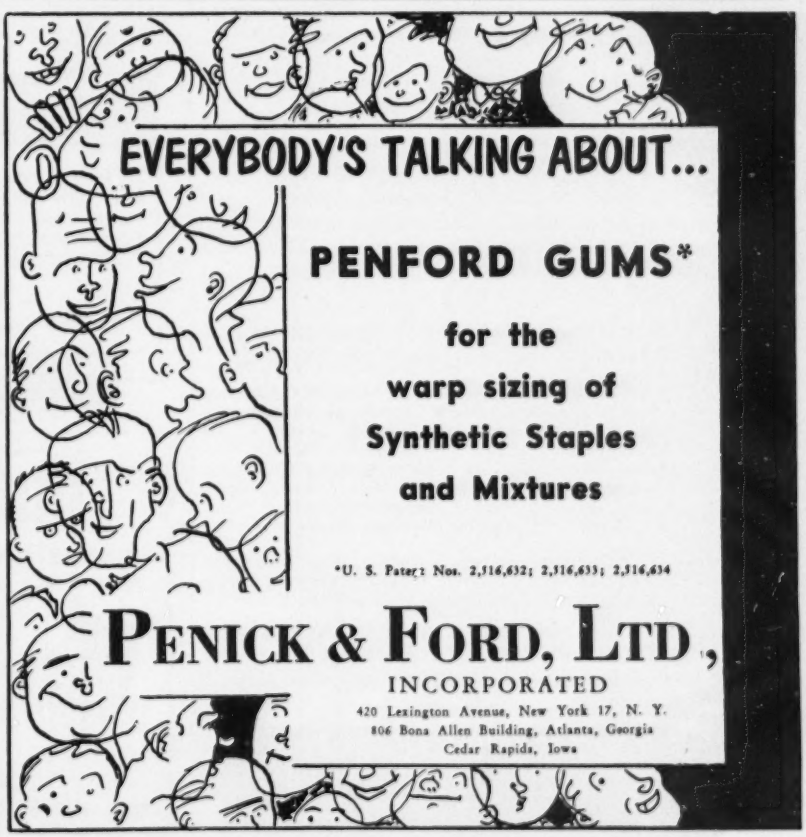

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bars are found to be open, this should be corrected if possible. In some cases, as with rotors that have the bars cast in with the shorting ring as one casting, the only thing that can be done is to replace the rotor; but in the case of most of the older motors, we find that the bars come loose where they are made up in the shorting ring. There are various ways of correcting this, such as brazing the bar ends to the ring or drilling and using a wedge to expand the bar tightly into the ring.

Bearing and Shaft. The bearings, if of the sleeve type, should be checked for wear and if beyond the allowable tolerance should be replaced. Ball bearings should be checked very carefully for wear and noise. Noise usually indicates rough balls or race. Of course, any bad bearings should be replaced.

The shaft should be checked both for wear and alignment. A slightly bent shaft can cause as much bearing trouble as any other cause. If the bearing surface is worn as much as the tolerance clearance of the bearing of the same size, in case of the sleeve bearing, the shaft should either be built up or replaced. This, of course, will depend on the condition of the entire shaft.

In the case of the ball bearing motor, the shaft should be not more than .0005" under the inner race measurement of the bearing. In other words, if the bearing will slip on the shaft without heating slightly, it is too loose, and if the bearing has to be heated very hot to get it on the shaft, it is too tight. When a ball bearing is put on a shaft too tight, the inner race is either distorted or expanded, causing preloading of the bearing. This, of course, will result in heating and short life of the ball bearing.

The bearing housing for ball bearings should be checked for wear and if worn should be bored out and bushed to the exact size, which, in my opinion, should be .0005" larger than the outer race measurement of the ball bearing being used. It is generally agreed that the ideal fit would be enough clearance to allow the outer race to creep in the housing while the motor is running. This fit is hard to obtain; in fact, if more than .0005" clearance is given, this being a snug push fit, the steady vibration and creepage will wear the cast iron housing until the bearing gets loose enough to start chattering. Once there is enough play, it does not take long to wear beyond all limits.

Danger of Creepage. On one group of motors we have, the manufacturer fitted the ball bearings with enough clearance to allow creepage. This was a good idea and theoretically a good thing, but it did not work out for us in actual practice. A large number of the brackets were replaced by the manufacturer because of wear and chattering and several reasons were given as the cause, other than being fitted too loosely. However, we still continued to have

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the same trouble.

After the warranty period was past, we found that we could bore and bush the brackets at less expense than we could buy new ones and also get the desired bearing fit. So far, I cannot recall a single bracket having been changed on these motors where we have fitted them snugly instead of leaving enough clearance for them to creep. We have changed approximately 60% of these brackets so far and are still in the process of bushing the others as they become noisy.

What to do about Wet Motors. When a motor is wet for any reason, it should be dried out thoroughly before being put back in operation. The best method of drying is in an oven designed for this purpose. There are times, however, when we have motors that cannot be spared long enough to be oven-dried or we may have more motors involved than can be dried in a reasonable length of time, due to limited oven space.

When we have an emergency, such as a number of motors being wet down in a spot that will shut down production, other methods have to be used for drying. There are a number of ways to dry motors by external heat, such as strip heaters, heat lamps, and forced hot air being heated from steam coils, electric heaters, or hot air furnaces. These methods are usually slow and costly.

The internal heating method, in my opinion, is the best method to use when there are several motors involved and it is necessary to get them back in service in a minimum of time.

By applying one-fifth of the rated voltage to a motor, preferably from an ungrounded source, the temperature rise will be slow enough to dry the coil insulation without damage from vapor or gases generated inside that might cause rupture of the insulation. This kind of drying should be done under close supervision.

The application of one-fifth of the rated voltage will usually cause a current in the windings of a little more than full load current as the drying is being done under locked rotor conditions. If faster heating is desired, it can be done by removing the rotor which will increase the current in the stator coils.

Where single phase voltage is being used to dry three-phase motors, the voltage should be continually alternated between phases to maintain more even heat in all the sets of coils. This heating should be continued until the insulation resistance has raised to at least one megohm for motors up to 550 volts. For higher voltage motors, the resistance should be at least one megohm per thousand volts. When the insulation resistance has increased to one megohm, the motor can then be put on rated voltage and left running until such time as it is put into operation or has completely dried from its own heat.

STA Meeting

(Continued from page 159)

up properly in shuttle

(9) Set transfer properly

(10) Dress shuttle properly with shellac and tallow

(11) Do not let shuttle become "washboarded"

(12) Run good pickers

(13) Keep shuttle hardware tight

(14) Try felt on box front and binder

Check Straps. Eight mills reported using curved check straps, three used straight straps, two used curved and straight straps, two used endless check straps, and two used curved straps with a helper.

The life expectancy of check straps varied from 900 to 2760 hours and from four months to eight months.

Strap Check Points. Check points to increase strap life were suggested as follows:

(1) Proper installation

(2) Use recommended picker sweep

(3) See that shuttle boxes correctly

(4) Use endless type of strap

(5) Do not choke straps

(6) Use correct length strap

(7) Try felt on box front and binder.

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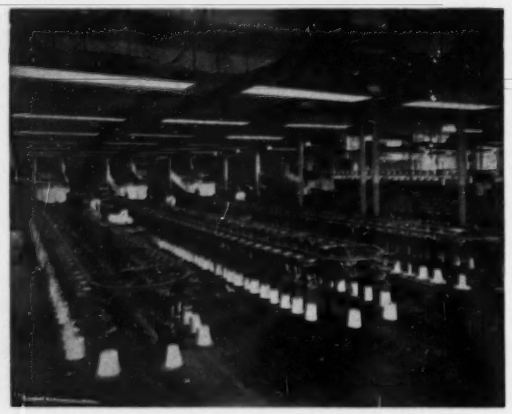

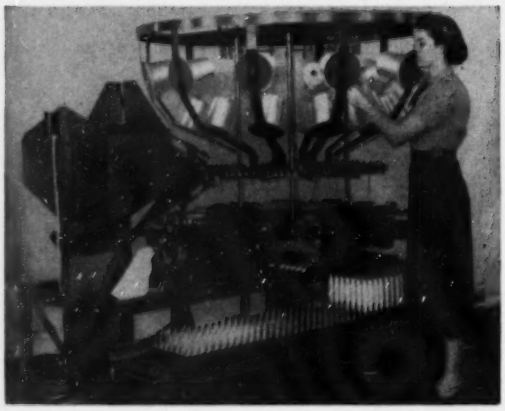

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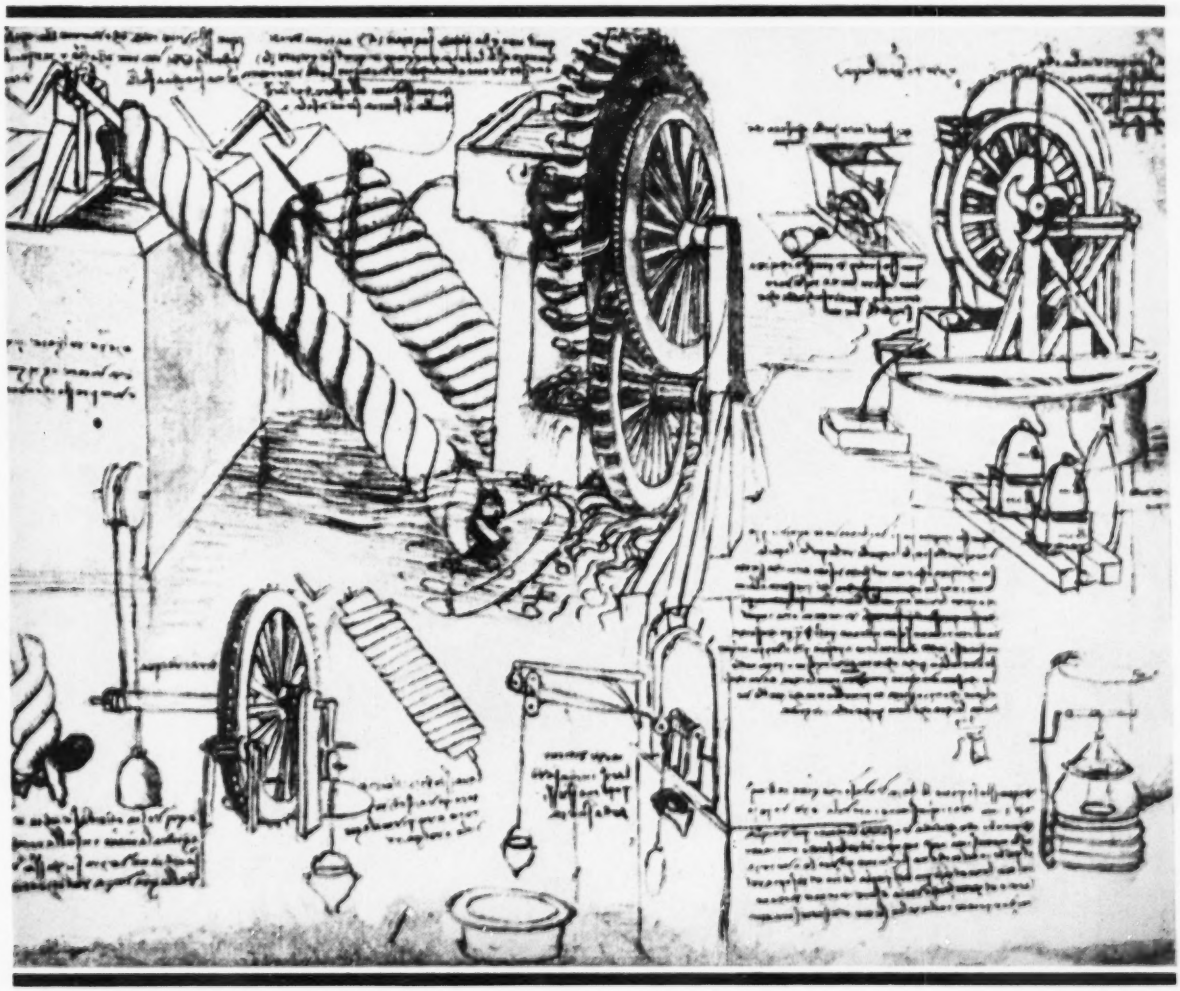

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